DOCUMENT RESUME

ED 182 877 EC 122 883

AUTHOR	Munson, Harold L.: Miller, John K.
TITLE	Mainstreaming Secondary Level Deaf Students in Occupational Education Programs.
INSTITUTION	Rochester Univ., N.Y. Graduate School of Education and Human Development.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.
PUB DATE	Aug 79
GRANT	G007601433
NOTE	386p.
EDRS PRICE	MF01/PC16 Plus Postage.
DESCRIPTORS	*Deaf: Exceptional Child Research: High School Students: Individualized Programs: Junior High School Students: *Mainstreaming: Program Design: *Program Evaluation: *Secondary Education: *State Programs: Student Attitudes: Teaching Methods: *Vocational Education
IDENTIFIERS	*New York

ABSTRACT

The 3 year study investigated four New York programs in which junior and senior high school students enrolled in schools for the deaf were mainstreamed into occupational education courses at neighboring education centers. Data were collected on philosophical views toward career education, information and decision making functions, individual educational planning and program articulation, establishment and maintenance of an effective learning environment, knowledge and attitudes toward deafness in the occupational setting, the social milieux, program graduates, and parental and student reaction. Among findings were the following: career guidance was largely nonexistent, parents relied heavily on the judgment of school personnel for program planning recommendations, written tests were seen as the appropriate assessment tool for evaluating students' content or substantive knowledge, the course options of deaf students were limited to reasonably receptive situations, classroom social climate was generally favorable toward mainstreamed students (ostensibly to protect them from negative bias), and a substantial number of student withdrawals reported difficulties with classroom instruction and evaluation processes. Suggestions were made regarding mainstreaming, vocational learning-maturaton, the cognition of work, social learning-maturation, developing individualized educational programs, gearing up staff, serving mainstreamed students, collaborating with parents, and providing transition from school to work. (SBH)

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MAINSTREAMING SECONDARY LEVEL DEAF STUDENTS

IN OCCUPATIONAL EDUCATION PROGRAMS*

UNIVERSITY OF ROCHESTER
GRADUATE SCHOOL OF EDUCATION AND HUMAN DEVELOPMENT
ROCHESTER, NEW YORK

AUGUST 1979

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*The research which is the subject of this report was supported by the U.S. Office of Education, Department of Health, Education and Welfare, Grant No. G007601433. The opinions expressed herein do not necessarily reflect the opinion or policy of the U.S. Office of Education and no official endorsement by the U.S. Office of Education should be inferred.

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SPECIAL ACKNOWLEDGEMENT

The directors and staff gratefully acknowledge the many contributions of the three research consultants: Dr. E. Ross Stuckless, National Technical Institute for the Deaf; Dr. Richard Hehir, New York State Education Department; and Dr. John Schroedel, Gallaudet College. Dr. Hehir and Dr. Stuckless have been involved significantly since the initial design of the research and their ideas and suggestions have permeated all aspects of the study. Dr. Schroedel joined the consultant staff in the second year of the research helping to guide those portions of the study dealing with attitudes toward and knowledge of deafness. The comprehensiveness of the study and the insights that guided its evolution are largely due to the knowledge and understandings which they so generously shared with us.

Harold L. Munson and John K. Miller, Co-Directors
August 1979

ACKNOWLEDGEMENTS

The schools in this study have been involved with the integration of deaf students in occupational education programs for several years prior to the enactment of Education for All Handicapped Children Act of 1975. As schools tool up to implement the provisions of Public Law 94-142, the experience of these schools should be helpful. The eight institutions in the four research sites have made bold and venturesome steps forward in extending educational opportunity for deaf students at the secondary school level. Their efforts hold considerable promise, not only for deaf students but for all handicapped individuals in the educative process. The help provided the hearing impaired in this cooperative venture has enriched the lives of these deaf students. In charting new approaches to the education of the deaf, these schools have provided hope that the aspirations and dreams of all handicapped youth may one day be realized.

The contributions of many students, both deaf and hearing, parents, teachers, pupil personnel workers, administrators, and secretaries made this study possible. For their time, understanding, and courtesies extended during the many weeks that the data were being gathered, the research staff at the University of Rochester extend their gratitude.

Several people at each research site contributed to the success of each data collection visit. To each of these individuals in particular our gratitude is due for their continued cooperation throughout the study.

At the Nassau site:

William T. Callahan, District Superintendent, Nassau County, Board of Cooperative Educational Services; Henry Bjorlie, Headmaster, Mill Neck Manor

Lutheran School for the Deaf; Eleanor Reynolds, Administrative Assistant, Nassau County, Board of Cooperative Educational Services; Mary Cleary Zarnitz, Supervisor of High School, Mill Neck Manor Lutheran School for the Deaf; Judith Ruderman, Guidance Counselor, Mill Neck Manor Lutheran School for the Deaf; James McCarthy, Teacher, Mill Neck Manor Lutheran School for the Deaf; Jerry Verhey, Counselor, Nassau County, Board of Cooperative Educational Services.

At the Westchester site:

Joseph J. Blaney, Former District Superintendent, Southern Westchester, Board of Cooperative Educational Services; Kendall D. Litchfield, Superintendent, New York School for the Deaf; Dr. David Spidal, Principal, New York School for the Deaf; Martin Sommer, Coordinator and Counselor, Mid-Westchester Center, Board of Cooperative Educational Services; Jack Tarins, Supervising Teacher, New York School for the Deaf.

At the Oneida-Herkimer-Madison site:

From 1976-1978: F. Wright Johnson, District Superintendent, Oneida-Herkimer-Madison Counties, Board of Cooperative Educational Services; William Izzo, Director, Occupational Center, Oneida-Herkimer-Madison Counties, Board of Cooperative Educational Services; Richard M. Sorensen, Guidance Counselor, Oneida-Herkimer-Madison Counties, Board of Cooperative Educational Services.

From 1978-1979: Dr. Andrew Rossetti, District Superintendent, Madison-Oneida Center, Board of Cooperative Educational Services; Randall Oaster, Program Coordinator, Occupational Education Center, Madison-Oneida Center, Board of Cooperative Educational Services. J. Jay Farman, Former Superintendent, New York State School for the Deaf; Robert Seibold, Superintendent,

Oneida-Herkimer-Madison site (continued):

New York State School for the Deaf; Martin Major, Coordinator for Occupational Education, New York State School for the Deaf; Grace Wilson, Director of Education Programs, New York State School for the Deaf; Alan Molmod, Former Director of Evaluation and Psychological Services, New York State School for the Deaf.

At the Rochester site:

Kenneth F. Harris, District Superintendent, Monroe County Board of Cooperative Educational Services #1; John J. McCormick, Assistant Superintendent, Monroe County Board of Cooperative Educational Services; Frances Kearney, Coordinator for the Deaf, Monroe County Board of Cooperative Educational Services; James Decker, Director of Occupational Educational Center; Monroe County Board of Cooperative Educational Services; Leonard Zwick, Superintendent, Rochester School for the Deaf; Harry Scofield, Counselor, Rochester School for the Deaf.

Contributions to this report have been made by Carol Gargantiel, Jerry Huang, and Gary Ladd, Research Associates; William Tammaro, Research Assistant; and Barbara Bird, Marjorie Hyatt, Valerie Wheeler, Jason Berman and Jenny Covill-Servo, Information Analysts.

Harold L. Munson and John K. Miller, Co-Directors
August, 1979

SECTION I

THE OBJECTIVES OF THE STUDY

This is a report of a three-year (1976-1979) intensive study of four existing programs in which students enrolled in a school for the deaf were "mainstreamed" in an occupational education course of study for one-half day at a neighboring occupational education center. These four joint institutional endeavors represent an approach to cooperatively utilizing the educational resources of an area in accommodating the developmental needs of a specific handicapped group. Although the four programs were similar in their basic structure, each one had its own implementational variations. In examining the shared responsibilities of both institutions for the learning-maturation of the deaf student, all aspects of the program were reviewed with regard to their impact on the physical, mental, social, self-concept and career development of the deaf student.

This particular educational arrangement represents only one of many possibilities for attending to the learning-maturation of the handicapped. However, in conceiving of mainstreaming as a process for accommodating the developmental needs of the handicapped, these programs illustrate the problems and the benefits that accrue as educators become increasingly attuned to the necessity of providing for both the special and the general educational needs of the handicapped.

There were a number of advantages associated with studying the features of these four programs. First, the programs were a voluntary response to the educational needs of a handicapped group rather than an involuntary response to the requirements of the law. Second, as a joint effort of both special education and occupational education interests, these particular programs serve to demonstrate how educational institutions with differing goals and perspectives can cooperatively evolve a synthesis of curriculum, methods, and auxiliary services that contribute to normalizing the educational experience of deaf handicapped children. These programs were all operational at the time the study was initiated. While they varied considerably in the length of time each program had been in existence, the logistical problems and anxieties in adapting to new and unfamiliar responsibilities had been more or less resolved at the institutional level. Consequently, the possibility of confusing transitory problems with the more operational and programmatic features of the mainstreaming situation was diminished.

THE PARTICIPATING INSTITUTIONS

The four specific programs studied were located in New York State. Each program involved a school for the deaf and a nearby cooperating occupational education center. The four research sites consisted of the following institutions: (1) the New York School for the Deaf at White Plains and the Southern Westchester BOCES (the Mid-Westchester Center for Occupational Education); (2) the Mill Neck Manor Lutheran School for the Deaf and the Board of Cooperative Educational Services of Nassau County (County Center and the Northeast Center); (3) the New York State School for the Deaf at Rome and the Board of Cooperative Educational Services of Oneida-Herkimer-Madison Counties Occupational Education Center (1976-78) and the Madison-Oneida Board of Cooperative Educational Services Occupational Education Center (1978-79); and (4) the Rochester School for the Deaf and the Monroe County Board of Cooperative Educational Services #1 at The Lester B. Foreman Vocational-Technical Center.

A more detailed description of each of the four research sites including specific information about their organizational structure, educational programs, pupil population, and education facilities is provided in the next section.

THE TEN OBJECTIVES OF THE STUDY

Ten areas of information were identified as essential in describing the mainstreaming approach used at the four different sites. In general, over a three-year period data was collected to describe the organizational operation of the programs; the performance of students participating in the programs; the instructional strategies utilized in the occupational education courses; the attitudes of students, parents, and school personnel toward the program; and the post-graduate educational/occupational pursuits of program participants. The three-year plan for data gathering provided for a regular, on-going assessment of each program as well as for a continual description of changes, modifications or accommodations in the structure and implementation of the program and the attitudes and behaviors of the people associated with it.

Objective 1. The administrative and philosophical features of each cooperative arrangement were considered basic to program development. This objective encompasses the identification of the philosophy of the various cooperative programs and their aims, purposes, and objectives. Administrator, pupil personnel worker, classroom teacher, student and parent perceptions of the program's nature and goals, both general and specific, were obtained. The identification of views concerning the career development of the normal and handicapped youth, as well as provisions made for their career education, was also procured.

Objective 2. Information about the deaf student population was gathered in order to describe the type of student participating in the program and to provide background information which would be helpful in understanding the types of problems and benefits which were identified. Further, such information was considered important in interpreting the possibilities for under-utilization or under-employment of the deaf. This objective focused primarily on gathering information which could be used to describe the traits of the individual enrolled in the programs. In general, information about the students was collected in eight basic areas: (1) academic achievement, (2) vocational interests and aptitudes, (3) educational aspirations, (4) attitudes toward work, (5) communication skills, (6) performance IQ, (7) career maturity, and (8) social position.

Objective 3. Describing the relative performance of handicapped and regular students is an important consideration in any integrated educational setting. In the occupational education classroom, student performance is assessed at both the cognitive and skill (or "hands on") levels. This objective emphasized the identification of the procedures and practices for evaluating the classroom performance of the deaf students. Instructional procedures were studied to ascertain what assessment differentials were utilized in evaluating the deaf students and to determine the practices employed in grading their classroom performance.

Objective 4. The instructional strategies employed in the occupational education classes were identified and described. Bringing the deaf student into the hearing classroom has obvious implications for the instruction, the media employed, and the patterns of communication that occur among the classroom teacher and the deaf and hearing students. In describing the occupational education classes where deaf students were enrolled, several areas of inquiry were delineated: (1) the instructional strategies used, (2) modifications in classroom teaching practice which were employed to accommodate the deaf student, and (3) provisions for helping the deaf student deal with special safety measures in the laboratory or shop. Other considerations, including in-service programs, designed to help the occupational education teacher better understand and more effectively work with deaf students were also explored.

Objective 5. A cooperative approach to the education of the deaf necessitates the development of channels of communication among the faculty of the two institutions and between their administrative units. This objective focused on the nature and extent of faculty communication and its relevance for instructional articulation between the classroom teachers in the school for the deaf and those in the cooperating occupational education center. Three distinct areas of information were obtained: (1) general program coordination concerns, (2) special services necessary to provide students and their parents with information essential to educational planning and the periodic review of educational programs and plans, and (3) the nature and types of interaction between personnel in both school locations. In reviewing these programs, program selection and orientation activities, the development of individualized educational plans, the need for and use of special service personnel (e.g. interpreters, tutors or counselors), and the types of activities in which they are engaged were examined. Faculty communication concerning student progress and student behavior and the nature and means of such communication were examined. Particular attention was directed toward the identification of problems and procedures in monitoring student progress and in dealing with content or skill deficiencies which might require changes or modifications in the student's instructional program.

Objective 6. This objective was predicated on the belief that the impact of the program on deaf students and on their feelings of adequacy and satisfaction with the program would be influenced by the way their handicap was perceived and understood by the hearing individuals in the school and classroom environment. Information to describe attitudes toward deafness and information about deafness among hearing students and occupational education staff members was obtained.

Objective 7. A description of the social interaction and friendship patterns between deaf students and their hearing classmates was the primary focus of this objective. Several studies of deaf workers have indicated the importance of social interaction in the total integration of the deaf worker on the job. Deaf worker staisfaction with a job as well as employer assessments of work achievement have been shown to be related to social interaction on the job. This "mainstreamed" approach to occupational education provides daily opportunities for deaf students to interact and work with hearing individuals. This experience can serve as a means of preparing the deaf students for the variety of social and work-related interactions which they encounter in the world of work. Work and social-oriented interactions were identified and the types of communication employed in these interactions were described. Peer ratings in four behavioral categories (considerateness, motivation and maturity, disruptive and attention seeking behavior and social ability) were obtained.

Objective 8. This objective was designed to explore the types of job or higher education placements obtained by program participants previously enrolled in the cooperative occupational education programs. It was anticipated that information about student placements and about the problems connected with their job or higher education involvements would add to the description of this cooperative venture and provide a base for interpreting the experiences of the more recent graduates and non-graduates. It became obvious during the first year of the research that the follow-up of previous program graduates was incidental and sporadic at best. Since no reliable or consistent body of information on past graduates could be obtained, this area of the study was abandoned.

Objective 9. Achievement at the occupational education center and the contributions of the program to learning-maturation of the graduates of 1977 and 1978 was assessed by a follow-up of their performance at work, in higher education, or in other post-secondary alternatives. Insofar as institutional policy permitted (or employer cooperation could be obtained), information concerning the work performance of graduates on the job (or in other programs) and the attitudes of their employers was obtained. This information has been helpful in determining the nature and extent of "job tailoring" required to accommodate the work routines for the deaf and for making interpretations concerning the degree to which the occupational training has prepared students to meet job demands. Details describing how the students felt about their jobs (or higher education program), their preparation for employment or continuing education, the problems they encountered, and the achievements they accomplished were obtained.

Objective 10. Parent and student reactions to and opinions of the "mainstreaming" experience were obtained at the beginning and at the conclusion of the occupational education course of study. Embarking on occupational education in a "mainstreamed" environment was a very difficult decision for many deaf students and their parents. The concerns of parents and students, the problems they endured, their contacts with school personnel and their satisfactions and dissatisfactions with the program were primary areas about which information was gathered.

THE UTILITY OF THE RESULTS

With the increasing attention now directed at providing the most productive environment for the learning-maturation of handicapped students, information describing the program experiences, the views and attitudes, the concerns and expectations, of school personnel, students and their parents can be helpful in improving and extending educational opportunities and practice for the handicapped. There is perhaps no better way of achieving a truly perceptive understanding of both the educational needs of youngsters and the quality of efforts to meet them, than systematic efforts to penetrate the totality of the educational experience as broadly and deeply as possible over an extended period of time. The momentary vignettes of educational practice and outcomes upon which most research depends for its data is aptly criticized for this superficiality. It has been the intent of this study to look longer, more deeply, and in greater breadth than is ordinarily possible at the educational events, their concomitants, and their consequences in the lives of a very special population of hearing impaired students, their parents, and the professional educators who serve them. This entire study has been based on the hope and the conviction that the information in this report concerning the "mainstreaming" of deaf students in an occupational education environment can serve to alert educators to many of the problems and benefits associated with the integration of the hearing impaired specifically, but also of the handicapped more generally in the regular school environment.

This study of institutional cooperation for mainstreaming deaf students in occupational education is deserving of serious study and consideration in planning and conducting programs for the education of the handicapped. Many of the obstacles to maximum cognitive, social, personal and career development, as well as the approaches for overcoming them, are not exclusively associated with any specific handicap. Since recent legislation emphasizes a continuous, cyclic program of student evaluation and individualized program planning and placement, the approach described in this study, suggests many possibilities for enhancing the education of the handicapped. In establishing instructional programs and in developing individualized educational plans for the handicapped, it is assumed that children's educational progress will benefit from both as much integration with normal children and as much special service as their individual needs require. It is further assumed that these provisions will be geared to contribute in complementary fashion to the individual's continuing learning-maturation in all facets of his/her development.

This study has implications for both the act of teaching and the process of learning. In viewing the possibilities for growth and the potential for problems in the integrated classroom, it is helpful to differentiate between the act of teaching and the process of learning. Teaching engages the learner in the process of education. It involves providing experiential conditions, situations, and activities for the learner and adjusting the pace and sequence of the learner's experiences. Teaching is not shaping, directing or controlling; but rather leading, exploring, and discovering. Teaching, then, is an activity which should be dynamic and personalized; not rote and mechanized. In the integrated classroom, as in any regular classroom, it is the teacher who adapts the instructional methods to accommodate the learning levels and modalities of the learner. To the extent that the teacher is able to adapt the act of teaching without vitiating the learning it should facilitate, normal classroom activity can be maintained. In the integrated classroom, it is the handicapped learner who adapts to the normal learning environment that has been enhanced to facilitate his participation along with that of his normal peer. To the extent that the learner is enabled to relate and respond to the classroom tasks, learning, in the form of everchanging personal perceptions, relationships and meanings, will occur. For the handicapped learner, learning new meanings and relationships results in new schemas and new responses. Through these new responses handicapped individuals learn to adapt to their environment in more productive and personally satisfying ways. In the slow, but gradual experiences of learning in the regular classroom, it is possible to achieve the goals of the normalization process (i.e., learning to avail oneself of the individual benefits afforded by maximum participation in the life-styles of normal peers).

SECTION II

THE FOUR RESEARCH SITES

The cooperative approach to mainstreaming deaf students in occupational education centers had been implemented, with some local variations, at four locations in New York State at the time this study was initiated. In this approach, selected deaf students receive their academic instruction in the school for the deaf where they are enrolled and their occupational education training in a nearby occupational education center. The occupational education center, in each case, was located in a neighboring Board of Cooperative Educational Services (BOCES) unit. Deaf students are enrolled in these programs during their junior and senior years and their instructional time is distributed between the two institutions (about three hours per day in academic instruction and two hours per day in occupational training). In all four instances, students are transported to and from the occupational education center--distances that range from 4 to 15 miles.

At each center the students can select an occupational course of study from a large number of up-to-date programs. These programs are staffed by specialized, certified teachers using the most modern equipment available. Under this arrangement, there is a shared institutional responsibility for the learning-maturation of the deaf students, although the school for the deaf assumes the major "caretaking" function.

In the following sections, each of the four research sites will be characterized. Information about the two cooperating institutions is provided as well as information about the nature of their cooperative program arrangements.

THE ROCHESTER SITE

The Rochester site consists of the Rochester School for the Deaf (hereafter referred to as RSD) and the Monroe County BOCES #1 Lester B. Foreman

Vocational-Technical Center (hereafter referred to as the Foreman Center).

Background information. RSD is located in Rochester, New York. The campus, founded in 1876, lies along a scenic river gorge in a combined residential and industrial section of the city. The facilities include an administration building, two instructional buildings, a dining hall, and a health center. One instructional building houses the primary and secondary grades, the physical education facilities, the pre-vocational and practical arts training department, a learning resource center, a library, and a media center. A preschool program is located in a second instructional building.

RSD is a private, non-sectarian, non-profit institution serving seriously hearing impaired children ranging in age from 3 to 20 years. The school has an enrollment of approximately 230 students. Most of the students come from Monroe County and other surrounding counties in the Genesee Valley region. Approximately 100 students reside in on-campus facilities and the remainder, living at home, commute to school each day.

Organizational structure. The educational program at RSD is organized in five divisions: preschool, primary, intermediate, advanced (junior high), and secondary (senior high). There is a home demonstration program serving children under age 3. The preschool division includes nursery and kindergarten levels and serves around 25 children between the ages of 3-6. Grades 1-3 are contained in the primary division, accommodating 46 children between the ages of 6 and 12. Approximately 50 children ages 12-14 attend the intermediate division (grades 4-6). The advanced division (grades 7 and 8) provide for 34 children (ages 13 and 15) and the secondary division (grades 9-12) serve 71 students (ages 15-21).

The administration consists of a superintendent, a supervising principal and supervisors for each educational division. In the advanced division the academic (12 teachers), vocational (6 teachers), and physical education (3 teachers) departments, each has its own director. In addition, a curriculum coordinator, instructional media coordinator, and a librarian are employed. The student personnel services staff consists of a director, a supervisor of residences, 19 residential counselors, a supervisor of recreation, a social worker, a school psychologist, an audiologist, a guidance counselor, 4 nurses and a dental hygenist. Consultation service is provided by an otolaryngologist, a psychiatrist, a dentist, and a medical director.

Program planning and placement decisions are the responsibility of a Vocational Planning Committee which is composed of six RSD staff members (School Principal, Supervisor of the Advanced-Secondary Department, Supervisor of the Practical Arts Department, Coordinator of the Cooperative Program at the Foreman Center, Guidance Counselor and the OVR Counselor). This committee reviews and evaluates information about candidates for enrollment in the occupational education program and has the responsibility for recommending approval or disapproval of placement requests.

Educational programs. Students at RSD usually spend three years in the advanced division and three years in the secondary division. During this time, students are enrolled in one of four programs: (1) academic; (2) technical; (3) occupational education and training (work experience); and (4) life adjustment. The academic program is designed to prepare students for post-secondary education. The technical program readies students for post-secondary vocational education. Students in the occupational education and training program combine work experience and high school coursework in order to prepare for employment after graduation. The life adjustment program is designed for students with poor school achievement or special needs. These students are provided with direct experience in everyday life situations.

All advanced and secondary students are required to participate in communications (speech), English, mathematics, consumer education, science, social studies, physical education, and health education courses. Electives in foreign languages (French, Spanish) and driver education are also available. Students with high academic achievement may enroll in advanced courses at the National Technical Institute for the Deaf (located in Rochester, N. Y.). RSD emphasizes the use of English in both spoken and written form. It employs the Rochester Method of communication which incorporates fingerspelling and simultaneous speech.

Pre-vocational study emphasizes the development of work skills, habits, and attitudes. Exploratory pre-vocational training is provided for students in the advanced program. During the first year, students participate in graphic arts, homemaking, industrial arts, and typing. In the second and third years, students may select from courses in wood, plastics, transportation, graphic arts, electricity, metal work, mechanical drawing, foods, child care, studio art, and creative crafts.

Pre-vocational study is provided for secondary students who do not pursue an occupational or technical program. These students can select from a wide variety of ten-week mini-courses that include typing, wood machining, metal fabrication, ceramics, screen painting, photography, nursing, home furnishings, costuming, sculpture, and stage design. Some of these courses have been adapted also for students in the Life Adjustment Program. In addition, RSD has established (fall, 1977) a program in office practice which provides training in use of office machines, filing, and on-the-job experience in the school's administrative offices. This two-year program includes one semester in keypunching at the Foreman Center.

The Foreman Center. The Foreman Center serves ten suburban Monroe County school districts. It is located in the southeast side of the County about 15 miles from RSD. It is governed by a District Superintendent and an Assistant Superintendent, who administer the several educational units that comprise Monroe County BOCES #1. At the Foreman Center, the staff includes a Director, two supervisors, and 50 teachers.

The educational programs at the Foreman Center are designed to expand the technical and vocational offerings which the component school districts it serves could not offer. About 1000 students from the ten school districts attend classes daily at the Center. These students spend one-half of each school day at the Center and the remaining time in classes at their home school. In general, the programs provide skill development for job entry and, insofar as possible, are organized to meet the needs of individual students. Occupational courses are offered in 29 areas: appliance repair and refrigeration, autobody, auto service, baking, cosmetology, cabinet making, carpentry, child care, commercial art, computer programming, basic data processing, keypunch, electricity, electronics, fashion design, food service, community services, general agriculture, machine shop, masonry, motorcycle and recreational vehicle repair, nursing, photography, plumbing, police science, printing, radio and TV servicing, turf management and landscaping, and welding. In addition, students may elect to participate in a general, exploratory occupational education program. The Center also offers a cooperative vocational education program in conjunction with area industry in which students learn skills in actual work situations. Most of the programs require two years of study, although a few can be completed in one year.

Cooperative arrangement with the Foreman Center. The cooperative program between RSD and the Foreman Center began in 1968. It is the oldest of the four programs in the study. Students in the technical, occupational education, and life adjustment programs at RSD may enroll in occupational training courses at the Foreman Center. Most students are enrolled for one or two years. However, some receive additional training as post-graduates under the auspices of the Office of Vocational Rehabilitation. Students receive 2-3 credits for each year of the study at the Foreman Center. High school diplomas are awarded by RSD.

Transportation to and from the occupational education center is the responsibility of the Monroe County BOCES. RSD students attending morning classes are picked up at their homes or at central locations and transported to the Center. After their morning classes, these students are bused to RSD. Afternoon students are bused to the Center from RSD and, upon completion of their classes there, and bused back to RSD, to their homes or to central locations for connection with home district school buses.

The mainstreaming of the RSD students at the Foreman Center is coordinated by a school counselor with a background in counseling and deaf education. The counselor maintains an office at the Center. Support services for the deaf students are provided by a teacher aide who assists with interpreting and tutoring as directed by classroom teachers. This service is supplemented by interpreters for post-graduate students provided by the Office of Vocational Rehabilitation whenever RSD deaf students are enrolled in the same classes with them. Volunteer interpreters are available one or two days per week as needed.

Since the inception of the program in 1968, the number of deaf students enrolled at the Foreman Center has ranged from 2 to 29. Enrollment for the most recent academic year (1978-1979) was 14. In the ten years that the program has been in existence, deaf students have enrolled in 14 of the 29 available programs (auto service, autobody, carpentry, baking, food service, data processing, computer programming, photography, electricity, cosmetology, machine shop, masonry, commercial art, and fashion design.

THE WESTCHESTER SITE

The Westchester site consists of the New York School for the Deaf (hereafter referred to as NYSD) at White Plains and the Southern Westchester BOCES Mid-Westchester Center for Occupational Education (hereafter referred to as the Mid-Westchester Center).

Background information. NYSD is located on a 77 acre campus near White Plains, New York, in Westchester County. The school is a private, non-sectarian institution serving seriously hearing impaired children. Approximately 280 students ranging from 3 to 20 years of age attend NYSD. One-third of the student population live within 20 miles of the school and the balance are residential students. The students come from New York City and Southeastern New York State.

Organizational structure. The school is organized in three divisions: primary, elementary, and junior-senior high. The primary level consists of nursery-first grade classes accommodating about 50 children between the ages 3-10. Grades 2-6 are included in the elementary division and serve 74 children (ages 8-14). About 112 students (ages 15-21) attend the junior-senior high division which consists of grades 7-12.

The administration at NYSD includes a superintendent, a supervising principal responsible for all levels of instruction, a dean and an assistant dean of students who supervise residential student affairs and after-school activities, and a director of pupil personnel services. Two supervising teachers work in the junior-senior high division with responsibilities for the academic and vocational education programs. The school employs a director of athletics and a director of the instructional materials center.

The teaching staff at the junior-senior high level consists of 17 academic teachers, 8 vocational education teachers, and 2 full-time teacher aides. There are 2 regular volunteer teachers and several student teachers.

Pupil personnel service employees include a full-time school psychologist, an audiologist, a guidance counselor, a school social worker, 3 nurses, and a nurse's aide. Services are also available from 2 consulting psychiatrists and 3 pediatricians. Several school personnel serve as representatives on an Occupational Education Committee consisting of the School Principal, Supervisor of the Academic Division, Supervisor of the Vocational Division, and Dean of Students. The primary responsibility of this Committee is to review information about applicants for the cooperative occupational education program.

Educational programs. NYSD offers academic programs in each division and utilizes total communication for instruction. At the junior high level, a full academic program is required including English, mathematics, science, social studies, and physical education. Senior high students must enroll in English, social studies, and physical education. Electives in mathematics, foreign language (German, Spanish, and Latin), science, music, history, and literature are available.

In the past, NYSD has emphasized vocational training, with offerings in 20 different areas. In recent years these offerings have been reduced to printing (including graphic arts) and ornamental horticulture. However, several prevocational courses remain a part of the junior-senior high program. Junior high school students rotate through eight pre-vocational courses: art, home skills, needle trades, graphic arts, business education, woodworking. horticulture, and driver education. Senior high school students can elect additional courses in these areas.

The Mid-Westchester Center. The main campus at the Mid-Westchester Center is located only 4-5 miles from NYSD. It consists of five buildings--each designed for different areas of study. The Center is staffed with a director of occupational education, a director of basic occupational education, 2 assistant directors, 4 counselors, 2 supervising teachers, and 40 teachers and serves approximately 1300 regular students and 300 special students from 28 suburban school districts.

Vocational courses are offered in 23 areas: air conditioning, heating and refrigeration, autobody repair, auto mechanics, aviation maintenance, carpentry, commercial art, conservation and recreation, cosmetology, culinary arts, data processing, dental assisting, drafting, electricity, floral design and landscaping, health services, practical nursing, medical office assisting, office skills, offset printing, radio and TV service, secretarial practice, and technical electronics.

A basic occupational education program was started in 1975 for special education students over the age of 15. This program allows students with special needs to explore eight basic occupational courses (food service trades, office skills, horticulture conservation, home, hospital, and motel aides, and distributive education). The exploratory period is followed by an opportunity for more intensive training in one of these areas. This program can be completed in 1-3 years depending on student needs and rate of progress. Upon completion of the program, students may be (1) placed in an appropriate job, (2) enter a regular occupational education program, or (3) return to the basic occupational education program for training in another area. This new program, however, is not to be confused with the regular program previously described. It is described here since it was suggested during the study that some deaf students in the regular program would have been more appropriately placed in this program.

Cooperative arrangement with the Mid-Westchester Center. Initiated in September, 1972, the cooperative program between NYSD and Mid-Westchester Center is the most recent of the four programs participating in this study. Deaf students are commonly admitted to the Center as juniors for a two-year occupational education program. Some students may be admitted as sophomores for particular programs (e.g., cosmetology); others may be admitted as seniors, although one-year programs are not recommended. Students participating in the cooperative program spend one-half day at the Center and the remainder of the day at their home school. The accessibility of the Center reduces transportation problems and travel time.

During the initial years of the program, a supervisor from NYSD, serving in a part-time capacity, was responsible for program coordination between the two schools. In February, 1976, a full-time school counselor was hired to coordinate the program and was assigned the major responsibility for serving as liaison between the two schools. In February, 1976, arrangements were made with the New York University Interpreter Traineeship Program to provide interpreting services for deaf students in occupational education classes. This service provides one or two interpreter trainees for portions (about half) of the fall and spring terms. For the remaining time in each term, other interpreters are employed. Consequently, interpreters are not always available throughout the entire school year; and even when they are available, the continuity of interpreting services to individual students suffers periodic interruptions.

At the beginning of the program in 1972, 5 seniors and 1 junior were enrolled in commercial art, printing, and data processing. Subsequent enrollment has shown steady growth with 24 students currently enrolled in the program. Deaf students have enrolled in 13 of the 23 available vocational programs (autobody repair, auto mechanics, aviation maintenance, carpentry, commercial art, conservation and recreation, cosmetology, culinary arts, data processing, electricity, office skills, printing, and basic occupational education). Data processing and autobody repair have been the most popular programs.

THE ROME SITE

Prior to the most recent academic year (1978-1979), the Rome site consisted of the New York State School for the Deaf (hereafter referred to as NYSSD) at Rome, New York, and the BOCES Oneida-Herkimer-Madison Occupational Education Center (hereafter referred to OHM Center). Beginning with the last year of the study (1978-79) a new cooperative arrangement was established with the Madison-Oneida BOCES Center (hereafter referred to as the MO Center), and NYSSD students were no longer enrolled in courses at the more distant OHM Center.

Background Information. NYSSD, operated under the jurisdiction of the New York State Education Department, is located in Rome, New York, a small city in the central region of New York State. The 15-acre campus, founded in 1875, is situated in a residential area in the northwest section of the city. Renovation of the campus was undertaken between 1966 and 1972. The present physical plant consists of seven buildings which house administrative offices, dormitories, vocational and academic classrooms, athletic facilities, and dining rooms. The school serves 258 students between the ages of 3-21. These students come from 118 school districts located in 31 central, northern, and eastern New York counties. Primarily a residential school, NYSSD houses approximately 80% of the students on campus.

Organizational structure. The school is organized around three Centers: (1) the Center for Instructional Programs, (2) the Center for Evaluation, Counseling, and Special Programs, and (3) the Center for After Class Programs and Student Residence.

The Center for Instructional Programs is responsible for the delivery of educational programs and is organized in three divisions: the lower school, the elementary school, and the junior-senior high school. The lower school consists of nursery-second grade serving 63 children (ages 3-9). The elementary school serves 80 students (ages 9-12) in grades 3-6. The junior-senior high school, consisting of grades 7-12, accommodates 115 students (ages 13-21). Within this division is the Instructional Media Center which is designed to provide staff members with instructional materials and services (e.g., a curriculum library, audio-visual equipment). The Center for Instructional Programs also contains the communication/arts department, offering instruction in speech, fingerspelling, signs, and auditory training. This Center is staffed with a director, a chairperson for each department, 44 instructors, and 7 instructional aides.

The Center for Evaluation, Counseling and Special Programs provides psychological services, vocational counseling, and remedial programming for students. This Center is staffed by a director/psychologist, a vocational counselor, a full-time OVR counselor, an audiologist, 2 volunteer perceptual therapists, and a psychomotor instructor. An Occupational Education Committee, composed of the Director for the Center for Evaluation, Counseling, and Special Programs, Chairman of the High School, Coordinator for the Cooperative Program, OVR Counselor, Director of Curricula, and an Industrial Arts Teacher, convenes to determine placement and program plans for students interested in occupational education programs.

Dormitory services, after class programs, and other extra-curricular activities are sponsored by the Center for After Class Programs and Student Residence. This Center is responsible for providing residence, laundry, food, and infirmary services and for coordinating activities such as clubs and intramural sports.

This Center has a director and 41 residence staff.

Educational programs. Students at NYSSD are enrolled in the junior-senior high school for a total of 7 years (2 years in the junior high division and 5 years in the senior high division). In the junior high program students are required to take courses in English, reading, mathematics, social studies, and science. Additional courses such as physical education, art, music, prevocational education, or health may be elected. A pre-vocational program for all junior-senior high students emphasized exploratory experiences relating to the world of work and the development of positive work attitudes. Students are exposed to four vocational education areas: (1) industrial arts (woodworking, metal shop, small engine repair, electricity, ceramics, and drafting); (2) graphic arts (letter press, offset, and photography); (3) home economics (sewing, cooking, home management, and family care); and (4) business education (typing and office machines).

The senior high school program requires students to enroll in courses covering eight areas (mathematics, English, social studies, science, reading, prevocational education, physical education, amd health). Senior high students may also choose electives (e.g., driver education, art, or dance). Students may pursue either an academic or vocational program during the final two years of senior high school. Pupils who elect an academic program enroll in college preparatory courses offered at NYSSD. Those who choose a vocational program participate in occupational education classes at the MO Center in addition to academic courses (math, English, reading) at NYSSD. A workshop program is offered for special needs or slow-learning students.

NYSSD employs total communication throughout the school encouraging the use of reading, writing, speaking, lipreading, speech, fingerspelling, and sign. Some form of accoustical amplification is employed by most students.

The OHM Center. The Oneida-Herkimer-Madison Counties BOCES serves 13 school districts in three counties. The main instructional facility, the OHM Center, is located on a 96-acre campus 15 miles from NYSSD. A second, smaller facility is located in Yorkville, a few miles from the OHM Center.

The staff at the OHM Center includes a director, 45 instructors, 2 guidance counselors, and a coordinator for the occupational education program.

The OHM Center offers 34 different courses of study in 9 vocational areas: (1) agriculture (agricultural mechanics, conservation, floral design and landscaping), (2) automotive (auto mechanics, autobody, recreational vehicle maintenance and repair, service station attendant, small engine repair), (3) building construction (building construction, maintenance, remodeling, carpentry, masonry), (4) business (advanced office machines and secretarial practice, automatic data processing), (5) electrical (electricity, electronic service), (6) graphic arts (commercial arts, drafting, offset lithography), (7) health (health careers, hospital assistant, medical office assistant, dental assistant, practical nursing), (8) machine and metal (machine tool operators, welding, metal trades), and (9) personal service (child care services, food service, cosmetology, customer services, home and commercial services).

Cooperative arrangement with the OHM Center. The cooperative program between NYSSD and the OHM Center was developed in 1971 and continued until 1978. Most students are enrolled in programs for two years. Upon completion of the program, the student was awarded a high school diploma by NYSSD. Pupils who participated in the program received their academic coursework at NYSSD and their occupational education classes at the OHM Center. The deaf students were enrolled in classes at the OHM Center with approximately 1000 students from other participating school districts. Students were transported to the OHM Center for one-half day, completing the balance of each school day in classes at NYSSD. The cooperative program between NYSSD and the OHM Center was supervised by a program coordinator. The coordinator, serving as a liaison for the program, divided his time between both schools (i.e., 3 days at NYSSD and 2 days at the OHM Center). He engaged in a variety of duties involving vocational guidance, interpreting, program development, and career education. In addition, the coordinator monitored and facilitated student progress and plans by working with the instructional staff at both schools.

The number of deaf students enrolled in the cooperative program has increased steadily from its inception in the spring of 1971 until its termination in 1978. During the program's first year, 12 deaf students were enrolled in the different courses. The greatest number of students, 26, were enrolled in the 1976-77 academic year. In 1977-78, the second year of this study, no juniors were enrolled in the program as a result of a change in the junior-senior high school program at NYSSD. In that year, the four-year high school program was extended to five years with the effect that the 1976-77 sophomores were retained at NYSSD for an additional year. Consequently, there were no regular seniors in the study in 1978-79. There were, however, three students who, because of special placement, came to be classified as seniors for the 1978-79 academic year. During this time, deaf students enrolled in 19 of the 34 courses of study offered at the OHM Center (auto mechanics, autobody, agricultural mechanization, conservation, machine tool operator, building construction, building remodeling, commercial arts, carpentry, cosmetology, electricity, data processing, office machines, home and commercial services, masonry, offset lithography, recreational vehicle maintenance, small engine repair, and welding).

The MO Center. During the third year of the study, termination of the cooperative arrangement between NYSSD and the OHM Center resulted in the transfer of NYSSD's efforts to the MO Center. The shift from the OHM Center to the MO

Center was negotiated during the summer of 1978. The principal reason for this major change was the greater accessibility of the MO Center which was located only 7 miles from NYSSD (as compared with the considerably greater distance to the OHM Center).

Although the MO Center is a somewhat smaller facility, its organizational structure (plant and personnel), programs, and the nature of the cooperative arrangement with NYSSD were essentially the same as those which characterized the previous program. The MO Center, like the OHM Center, is an educational resource center serving 10 local school districts.

The MO Center employs an instructional staff of 76, consisting of 40 occupational education teachers, 15 special education teachers, and 21 teaching assistants. Support personnel include 2 school psychologists, 2 social workers, 2 school counselors, and an SEIMC training specialist.

The enrollment of the MO Center is 1040 students. Of this number, 836 (77%) are enrolled in the regular occupational education program, 98 are enrolled in a pre-vocational occupational education (SAMS) program for freshmen and sophomores and 106 participate in a special needs occupational education program for secondary level slow learning students. A total of 12 NYSSD students were enrolled in regular occupational education courses at the MO Center during the 1978-79 school year.

The scope of the course offerings at the MO Center parallel those provided at the other sites. There are 22 courses in the regular occupational education program including agricultural mechanics, autobody and collision, automatic data processing, auto mechanics, carpentry, child care, computer operation and programming, conservation, distributive education, equine husbandry, food trades, hairdressing and cosmetology, health assisting, heavy equipment operation and maintenance, machine shop, masonry, ornamental horticulture, plumbing and heating, practical nursing, trade drafting, and trade electricity.

In the pre-vocational SAMS (Skills, Attitudes and Materials) program for freshmen and sophomores, students elect to sample two of four occupational clusters including building occupations, personal services, environmental occupations, and mechanical occupations. Students in the special needs program may, depending on their abilities and performance, participate in the regular or SAMS occupational offerings on a partial mainstreaming basis.

All students attending the MO Center are evaluated by school personnel four times yearly on criteria related to mastery of theory, attainment of practical skills, and the development of work habits/personal traits.

THE MILL NECK SITE

The Mill Neck site consists of the Mill Neck Manor Lutheran School for the Deaf (hereafter referred to as the Mill Neck School) and two of the centers operated by BOCES at Nassau County (hereafter referred to as the County Center and the Northeast Center).

Background information. The Mill Neck School is located in the village of Mill Neck, New York, on the north shore of Long Island in Nassau County. Nassau County encompasses an area of 274 square miles with a population of over 1,500,000. The Mill Neck School campus is situated on 86 acres bordering an upper middle class residential area. The physical plant consists of four main buildings housing a lower, a middle, and upper school, a campus dining facility, gymnasium, pool, media center, chapel, and library.

The Mill Neck School is a private, non-profit institution founded by the Lutheran Church in 1951. The school serves seriously hearing impaired children between the ages of 3 and 21. Approximately 180 students are enrolled at the school with the majority residing in Nassau and nearby Suffolk counties. All students commute to school daily, since no residential facilities are provided.

Organizational structure. The educational programs offered at the Mill Neck School are organized in lower, middle, and upper divisions. Each division is upgraded. The lower division serves 46 children (ages 3-11). Approximately 53 children (ages 11-14) attend the middle division. The upper division serves 81 children (ages 14-21).

The school's administrative personnel includes a headmaster, a principal, and a supervisor for each of the three divisions. The lower division is staffed by 8 classroom teachers, 4 teacher aides, and 2 speech therapists. Seven classroom teachers, 3 teacher aides, and 2 speech therapists are employed in the middle division. The staff in the upper division includes 10 classroom teachers, 5 teacher aides, 2 speech therapists, and 1 counselor. Personnel serving students in all three divisions includes 2 physical education teachers, a school nurse, a media specialist, a psychologist, an audiologist, and an art teacher.

Among the school's facilities is the media center, which provides educational materials and electronic equipment for the instructional staff. The library contains a variety of resources ranging from children's books to professional special education journals. The school's career development center makes materials (e.g., movies, filmstrips, and pamphlets) available for classroom career education activities.

Educational programs. Students in the upper division at the Mill Neck School are enrolled in an academic, vocational, or "mid-day" program. The academic program is designed to prepare students for higher education. Students are required to take speech, mathematics, reading, social studies, science, art, and language. Electives are available. The vocational program is designed to provide students with occupational education and training. Vocational students are enrolled in basic academic courses such as language, reading mathematics, and speech at the Mill Neck School and attend either the County Center or the Northeast Center for occupational training. The mid-day program is designed for multiply handicapped and slow learning students. Mid-day pupils receive basic instruction in math, language, reading, and life adjustment. These students participate in short (3-week) mini-exploratory courses in occupational education courses at the County Center.

The Mill Neck School utilizes total communication at all levels of the instructional program. Students are encouraged to employ every available mode of communication including speech, art, fingerspelling, signed English, gestures, and typewriting.

Nassau County BOCES Centers. The Nassau County BOCES consists of six centers located throughout Nassau County. One location, the Salisbury Center, houses the administrative offices. The remaining five Centers contain various occupational training facilities. Students from the Mill Neck School attend classes at two of these Centers--the County Center and the Northeast Center.

The Nassau County BOCES is governed by a superintendent and 26 other executive and supervisory staff. The personnel at the County Center includes a principal 3 vice-principals, 63 teachers, 18 teacher aides, 4 guidance counselors, a school nurse, 2 special needs counselors, and a special needs placement counselor. Somewhat smaller, the Northeast Center is staffed by a principal, a vice-principal, 33 teachers, a teacher aide, 2 guidance counselors, a school nurse, and a special needs placement counselor.

The Nassau County BOCES Centers offer over 80 different 2-year occupational education courses in 12 vocational areas:

1. agricultural (animal care, conservation, floral design, ornamental horticulture)
2. automotive service (autobody repair, automotive mechanics, diesel engine mechanics, heavy duty truck repair)

3. aviation and marine (aircraft maintenance, aviation operations, marine maintenance)

4. construction (architectural drafting, building mechanics, carpentry, masonry, plumbing, electricity)

5. electronics (industrial electronics, radio and TV repair, technical electronics)

6. food and hospitality (baking, classical cuisine and catering, commercial food preparation and services)

7. graphics, art and communications (commercial art, photography, offset printing, television studio operations)

8. health (child care, dental assisting, health services, practical nursing, medical assisting, medical laboratory assisting)

9. machine and metal (machine shop or trade, sheet metal fabrication, welding)

10. office and distributive (banking, computer operations, computer programming, data processing, machine bookkeeping, office services, retail business, travel services)

11. personal services (cosmetology, fashion design)

12. repair services (heating and plumbing, major appliance repair, office machine repair, refrigeration and air conditioning, small engine repair).

The cooperative arrangement with the County and Northeast Centers. The cooperative program between the Mill Neck School and the Nassau County BOCES Centers was instituted in 1971. Lacking "in-house" pre-vocational or vocational training programs, the Mill Neck School began to utilize the Nassau County BOCES Centers for exploratory and occupational education courses. All students in the upper division may elect to participate in a multi-occupational exploration program during their sophomore year. In this one-year pre-vocational program, students elect to attend a series of short courses (6 weeks) in which they are exposed to a variety of occupational training areas. At the end of the multi-occupational year, students may elect to enroll in one of the two-year occupational education sequences offered at the County or Northeast Center during their junior and senior years.

Students participating the the cooperative program receive their academic coursework at the Mill Neck School and attend occupational education classes at the County or Northeast Center. Deaf students attend classes at the Center along with students from surrounding school districts. Students are transported to the Centers for a half-day and complete the balance of the school day at the Mill Neck School.

In past years, the cooperative arrangement between the Mill Neck School and the Nassau County Centers has been supervised by a counselor appointed by the Centers. However, due to the increasing number of deaf students enrolled in the program, a teacher from the Mill Neck School was appointed (1977-78) to assist in the coordination of activities between the Mill Neck School and the two participating Centers. These two counselors have responsibilities for consulting with teachers in both locations, for counseling with students, for conferencing with parents and for contacting others in the community as needs arise.

Since the beginning of the program in 1971, the number of deaf students enrolled at the occupational education centers has increased. Three students participated in the program the first year and 15 students in the second year. Increases in student enrollment have continued, and during the 1978-79 academic year, a total of 27 students took part in the program. Of these students, 15 were enrolled in the multi-occupational exploration program, 9 participated in a first-year occupational education course, and 4 pursued a second or third year of occupational training.

Since the program's inception, deaf students have selected 22 of the approximately 80 courses offered at the Centers (architectural drafting, autobody, auto mechanics, baking, carpentry, child care, commercial art, commercial photography, data processing, fashion design, floral design, machine trades, major appliance repair, masonry, medical laboratory assisting office services, offset printing, ornamental horticulture, refrigeration and air conditioning, trade electricity, and welding). Of these courses, deaf students select office services, offset printing, and auto mechanics most frequently.

COMPARISON OF THE RESEARCH SITES

Examination of the four research sites highlights several noteworthy similarities and differences.Of the four sites studied, 2 schools (i.e., Mill Neck School and NYSD) are located in metropolitan downstate New York. The remaining schools NYSSD and RSD) are located in central and upstate New York respectively. Three of the schools are privately operated, whereas one (NYSSD) is a state institution. Of the three private schools, Mill Neck is church-affiliated, while NYSD and RSD are non-sectarian. With the exception of the Mill Neck School, the schools provide residential facilities for students who are unable to commute to campus.

The student populations at the home schools range from 180 to 280 pupils, with NYSSD having the largest enrollment and the Mill Neck School the smallest. Approximately 55-57% of the students at each school are males. Of the non-commuter schools, NYSSD has the largest proprotion of residential students (81% of the total student population), followed by RSD (43%), and NYSD (33%).

Each of the four home schools is organized according to age-specific divisions (e.g., primary, elementary, and junior-senior high), and serve populations ranging from 3-21 years of age. In three locations, each division is partitioned by grade level. Only the Mill Neck School employs ungraded classes in its instructional program. At NYSSD, many of the instructional and ancillary services are staffed and organized by "centers" which supersede age and grade divisions. Student enrollments for junior-senior high or "upper division" programs is largest at NYSSD (115) and smallest at Mill Neck Manor (81), with enrollments of 105 and 112 at RSD and NYSD respectively. All of the home schools are staffed with administrative, teaching, and pupil service personnel. NYSSD, which maintains the largest instructional staff (44), employs almost twice as many teachers as the other schools for the deaf. Mill Neck Manor employs the largest pupil personnel services staff (13) compared to staffs of 7-10 PPS workers at other schools for the deaf.

Three schools (the Mill Neck School, NYSSD, and RSD) provide programs for special-needs or slow-learning students. Total communication is emphasized at all schools except Rochester School for the Deaf, where the Rochester Method of vocalization/fingerspelling is utilized. All home schools, except the Mill Neck School, provide "in-house" exploratory occupational education courses during the students' junior and senior high school years. The range of exploratory courses varies considerably by site, with RSD offering the largest selection of vocational courses (12 areas). NYSSD (4 areas) and NYSD (2 areas) are much more limited in their offerings. Due to the lack of occupational education facilities at the Mill Neck School, exploratory occupational experience is provided by the Nassau Centers during students' sophomore year in a manner specifically designed to articulate exploration with subsequent regular occupational coursework. The cooperative arrangement with the local occupational education centers enable all home schools to offer the opportunity for specialized 2-year occupational education programs during the last 2-years of the student's high school program.

The cooperative programs between the home schools and the occupational centers have been in operation for varying lengths of time. The oldest program, involving RSD and the Foreman Center, began in 1968. The other cooperative programs have been in existence since 1971 or 1972. Nassau BOCES, serving Mill Neck Manor students, is by far the largest program, consisting of 5 occupational education centers located throughout Nassau County. By comparison, the Mid-Westchester Center serves 28 school districts, and is larger than the Foreman Center and the Madison-Oneida Center which serve 10 school districts each. These size differences are also reflected in the number of vocational instructors employed at each site. For example, Nassau BOCES employs 96 teachers at the two cooperating centers, whereas the remaining sites support between 45 and 50 instructors.

Various facilities and programs are made available to each school for the deaf by the cooperating occupational education center depending on the site. The largest selection of occupational education courses (approximately 80) and facilities is offered by the Nassau Centers. In contrast, the range of available courses (22) is most limited at the Madison-Oneida Center. A total of 29 courses of study are available at Foreman Center, and the Mid-Westchester Center offers 23.

The four cooperative programs also vary in the extent to which special support services are provided for deaf students in the occupational education classes. For example, in addition to services provided or arranged by the program coordinator, students enrolled at the Mid-Westchester Center receive classroom assistance from interning interpreter trainees and from part-time interpreters hired by the Center. The Foreman Center, on the other hand, employs a full time teacher-aide to provide interpreting and tutoring services, benefits from assistance of and makes use of interpreters for post-graduate students under the auspices of the Office of Vocational Rehabilitation.

In each of the cooperative programs, a coordinator is responsible for the liaison between the two schools. Generally, a coordinator for the joint program is employed by and maintains an office at the occupational education center. At NYSSD, however, although the program coordinator is a BOCES employee, he is housed at the home school and spends the majority of his time there. The Mill Neck School has recently undertaken more direct responsibility for the coordination function by appointing one of its own staff members to assist the coordinator employed by the Nassau Centers.

Although job descriptions vary somewhat from site to site, the coordinator of the cooperative occupational education program serves as the primary communication link between the two participating facilities. In every case, the coordinator's job description is defined in terms of services provided to both the school for the deaf and the neighboring BOCES center. In general, the administrative responsibility of the coordinator is both supervisory and facilitative in nature. It requires daily attention to purely logistical aspects of operating the cooperative program, as well as continuous monitoring of student participation and progress. In this role coordinators often serve on vocational planning committees, helping to secure information and screen potential candidates for placement in the mainstream occupational education programs. They also provide a variety of service-related functions to teachers and students at both schools for the deaf and at occupational education centers. Career education, vocational counseling and guidance, remedial and tutorial assistance, classroom problem solving and intervention, inservice training of professional staff, job and work-study placement and supervision, and consultation with teachers, parents, and students often fall within the coordinator's domain. Finally, the coordinator is often responsible for identifying and procuring special support services designed to meeet the psychological, vocational, communication, or instructional needs of students enrolled in the cooperative program. Thus, by implication, student advocacy is also a major part of the coordinator's role. In all four sites the duties assigned to the program coordinator make that position, unquestionably, the pivotal function upon which the efficiency and success of the program depends.

SECTION III

DESIGN AND METHODOLOGY

The investigation was committed to take maximum advantage of the data available from relatively small groups of subjects participating in the cooperative occupational education programs at any given site over the duration of the project and across all sites in any given year. It was important, therefore, for the design of the study to optimize the use of both longitudinal and cross-sectional data within the limitations of the project's three-year duration.

DESIGN

The design employed is one known in the developmental literature as a time-lag-sequential design (Achenbach, 1978). This procedure involves investigating the progress of each of several successive cohorts of subjects from the point in time that each cohort becomes eligible for inclusion in the investigation. Once included, all cohorts are studied at corresponding points in their developmental histories until termination of the investigation. This procedure makes the most efficient use of the opportunity to study and compare similar events in the histories of the largest number of noncontemporary groups over a fixed period of time.

Cohorts enrolling in the years 1975, 1976, and 1977 in the cooperative occupational education programs were studied during three consecutive academic years: 1976-77, 1977-78, and 1978-79. During the first year the first cohort were seniors who had already completed one year in the program. In succeeding years they were followed through their first and second years of employment and/or postsecondary education. The second cohort was the single group for whom the most complete occupational education and postgraduate employment history could be obtained. They were studied from their entry into the program as high school juniors at the beginning of the project and were followed through their senior year and first post-graduate year of employment or continuing education. The third cohort formally entered the occupational program as juniors at the beginning of the project's second year of operation. They were followed from their selection for participation in the cooperative program in their sophomore year to their completion of the program at the end of their senior year. No postsecondary followup data were obtained for this third cohort because the project terminated at their point of entry into employment.

This combination of three consecutive cohorts, observed over a three-year period, provided complete data on two different cohorts for the entirety of their occupational program. It also made possible the study of two different cohorts through part or all of their vocational training and through the first one or two years following graduation. Viewed from the perspective of cross-sectional comparisons made possible by the time-lag-sequential design, data were obtained for two classes of juniors, three senior classes, two first-year postgraduate groups, and one second-year postgraduate group. Table III-1, giving the status of each cohort in each year of the investigation, represents graphically both the longitudinal features (rows) and the cross-sectional features (diagonals) of the design.

Table III-1

Academic (Junior, Senior) and Follow-Up (F.U.) Status of Deaf Cooperative Occupational Education Students by Cohort and by Academic Year

Cohort (Year of Entry)	Academic Year		
	1976-77	1977-78	1978-79
I (1975)	Senior	F.U.	F.U.
II (1976)	Junior	Senior	F.U.
III (1977)	Sophomore	Junior	Senior
IV (1978	---	---	Junior

SUBJECTS

In the course of this investigation data relevant to several major research objectives were gathered from a variety of sources. Subjects from whom and about whom information was sought included (1) deaf students enrolled in the four cooperative occupational education programs, (2) hearing classmates of deaf students, (3) parents of deaf program participants, (4) educators functioning in administrative, pupil personnel services, and instructional capacities at schools for the deaf and at occupational education centers of New York State Boards of Cooperative Educational Services (BOCES). Specifically different research objectives often necessitated the use of different kinds of data collection techniques (e.g., interviews, questionnaires, inventories, direct observation). Moreover, depending on the nature of the information needed, different objectives entailed collection of the appropriate data from and/or about different groups of subjects. For this reason the description of sampling procedures and instrumentation specific to each aspect of the investigation has been detailed below with the description of that aspect of the study most directly.

The Target Population

The entire focus of the study, regardless of the manner in which data were obtained or the subjects from whom they were elicited, was to illuminate from many different vantage points the educational experience of deaf students integrated into regular occupational education programs. These students constitute the project's primary or target population: three successive cohorts of students at four schools for the deaf in New York State who enrolled in regular training programs offered at neighboring occupational education centers conducted by New York State Boards of Cooperative Educational Services (BOCES). (cf. Section III A, Design.) Throughout the investigation efforts were made to obtain, wherever possible, complete population data on the principal variables involved in pursuit of each research objective. Students in the original target population who withdrew from an occupational education program and either resumed full-time attendance at a school for the deaf or embarked on early entry into the labor market remained part of the target population. Their progress, like the progress of those who remained in the programs, was monitored regularly for the duration of the project. In addition, students who entered the occupational training programs under unusual circumstances (i.e., early entry into three-year programs as sophomores or late entry in their senior year) were also treated as members of the target population.

Table III-2 describes the target population enrolled in each year of the study by site and by grade level. Combined enrollments for all sites were 84 students in the first year, 77 in the second, and 76 in the third.

Table III-2

The Frequency Distribution of Enrollments by Deaf Students In Participating BOCES Programs by Year, by Site, and by Grade-Level

	Academic Year								
	1976-77			1977-78			1978-79		
Grade-Level	Jr.	Sr.	Total	Jr.	Sr.	Total	Jr.	Sr.	Total
Site									
Mill Neck	11	3	14	15	13	28	10	17	27
White Plains	7	8	15	10	10	20	9	15	24
Rome	13	13	26	2	11	13	7	5	12
Rochester	15	14	29	6	10	16	3	11	14
Totals	46	38	84	33	44	77	29	48	77

It will be noted from Table III-1 that enrollments varied considerably from year-to-year and from school-to-school. This is attributable to a number of factors, most notably (1) the gradual, but consistent expansion of the program at the Westchester site; (2) a marked decline in junior year enrollments at the Rochester site; and (3) a sharp decline in 1977-78 junior enrollments (and in senior enrollments the following year) at the Rome site as a result of reorganization of the NYSSD high school program and relocation of its cooperative program to the Madison-Oneida Occupational Education Center.

The distribution of deaf occupational education students by sex over all three years of the project evidenced a consistent trend for boys to outnumber girls. The smallest overall difference between the numbers of male and female participants was observed in the first year (44 males, 40 females). This group was particularly notable for a sex by grade-level interaction in the distribution of boys and girls between the junior and senior classes. In the senior group girls outnumbered boys 24 to 14; while among juniors there were almost twice as many males (30) enrolled as females (16). In the two subsequent years, the difference in numbers of males and females who participated in the cooperative programs was more marked. In 1977-78 there were a total of 46 boys (59%) and 32 girls (41%); and in 1978-79 there were 48 boys (62%) and 29 girls (38%). There were notable differences among schools with respect to proportional representation of the sexes in the occupational programs. Generally speaking, at the Westchester and Rome sites differences in enrollment between the sexes were not as great as at the Mill Neck and Rochester sites. At Westchester, in fact, girls slightly outnumbered boys over the duration of the study, while at Rome boys outnumbered girls by a margin of only 3 to 2. In contrast, male enrollments at both Mill Neck and Rochester exceeded female enrollments by more than 2 to 1.

Withdrawals from the occupational education programs were variable from year-to-year. During the 1976-77 academic year the withdrawal rate was 16.6% (N = 14); during 1977-78, 22% (N = 17); and during 1978-79, only 8% (N = 6). In addition to those who discontinued occupational study during the course of an academic year, a total of 8 students who completed one year as juniors, did not return for a second year of study. Of these 8, 5 did not return in September, 1977, and 3 failed to return in September 1978. During the entire course of the investigation only 3 students who withdrew altogether from an occupational program subsequently returned for a second attempt. Given both the small absolute frequency of withdrawal from the program at any of the four locations and the great variation in the circumstances associated with individual withdrawals, no attempt was made to formulate explanatory generalizations regarding dropout rates. Nonetheless, the total number of dropouts (N = 45) represents a substantial proportion (25.7%) of the total enrollment of 175 students who participated in the occupational programs during the course of the entire investigation. Proportionately speaking, the individual programs most severely affected by attrition were those at Westchester and at Rochester, where 40% (8 of 20) and 25% (4 of 16) respectively withdrew during the 1977-78 year. It is also of interest to note that male withdrawals in each year of the study roughly exceeded female withdrawals by a ratio of 2 to 1, in spite of the fact that enrollment differences between the sexes were not so extreme. It is also noteworthy, but unexplained by data obtained in the study, that relative attrition rates by grade level shifted substantially during the course of the investigation. In the first year juniors accounted for 78% of all withdrawals; in the second year withdrawals among juniors and seniors were approximately equal in number; and in the third year seniors accounted for two-thirds of the withdrawals. Though the underlying causes of attrition are not clear, it must be noted that, over all three years, withdrawal by both juniors and seniors occurred primarily among those who were new entrants into the programs. In the second and third years of the study 10 to 12 seniors respectively entered occupational courses for the first time. It was these two groups, groups of late entrants rather than seniors who had already completed a year of occupational training, that were principally responsible for senior withdrawals.

Efforts to define the target population in clear and unambiguous terms were confounded not only by withdrawals and late (i.e., senior year) entry into the programs but by several other anomalous circumstances. For example, Mill Neck sophomores were eligible for participation in an exploratory "multi-occupational" course, in which students were able to rotate through a series of introductory exposures to several occupational courses as an aid to electing a course of study for their junior year. These students, when they formally enrolled in an occupational course of study, therefore, already had a year of BOCES experience behind them. Moreover, it was possible for such students to terminate their "multi-occ" status in favor of permanent, regular enrollment in single course of study during the "multi-occ" year. The result was, in some cases, that students classified as sophomores one year were classified as seniors the following year. In another case, three multiply handicapped Rome students, who had been previously enrolled in sheltered workshop training entered the program as seniors in the third year of the project. Some students classified as seniors in the first (N = 2) and second (N = 8) years of the investigation returned to the occupational center for additional training the following year. In some cases this was classified as postgraduate training under Office of Vocational Rehabilitation sponsorship; in other cases, the students returned for an additional "senior" year under the cooperative arrangement between the schools for the deaf and the centers. In one instance a junior continued to be classified as a junior during his second year. Finally, as already mentioned, an occasional student who withdrew from a program one year re-entered the following year.

In order to document as fully as possible the conditions under which the occupational programs actually operated, a continuous effort was made to reflect the existing status of the target population in all data collection. At the same time, contingencies which introduced uncontrolled and irregular fluctuations in the target population were taken into account as fully as possible in data analysis and interpretation. Over the duration of the project, considering not only students following the usual pattern of program entry and progress but those exhibiting idiosyncratic histories of program participation, the total target population numbered 175 individual students. The actual magnitude of the research effort is, perhaps, better indicated by the total number of years of personal educational and occupational experience in which data were collected regarding these 175 individuals. The total number of years of schooling for which data was collected, summed over all years of membership in the target population for all subjects enrolled in the cooperative programs was 378. Entries in Table III-3 correspond to the breakdown of this total by cohort and by academic year within each category of membership in the target population.

The entire target population was also evaluated with respect to several other background variables. These included measures of intelligence, academic achievement, receptive and expressive communication skills and parental socioeconomic status. These variables were selected for their presumptive relevance to target students' adaptability to the occupational education environment. The cognitive measures were chosen to verify the intellectual preparedness of the students, generally speaking, for the learning experiences afforded

Table III-3

The Number of Subjects in each Cohort of the Target Population for whom Data were Collected in each Academic Year

Cohort	Academic Year 1976-77	Academic Year 1977-78	Academic Year 1978-79		Total Number of Individuals
I	(Senior) 38	(Follow-up I) 36	(Follow-up II) 36		38
II	(Junior) 46	(Senior) 44	(Follow-up I) 35		56
III	(Sophomore) 33	(Junior) 33	(Senior) 48		52
IV	--	--	(Junior) 29		29
					175
Totals (by years and over all years)	117	113	148	378	

by occupational training. It was also of interest to determine their level of cognitive functioning relative to their peers at the schools for the deaf. Communication skills were considered important as a basis for assessing the extent to which they were prepared for instructional and social interactions characteristic of a hearing environment. Finally, parental socio-economic status was chosen for its utility as a correlate of variables generally relevant to occupational/educational choice (e.g., parental education, income, values, career expectations, educational opportunity, etc.).

Measured Intelligence (IQ)

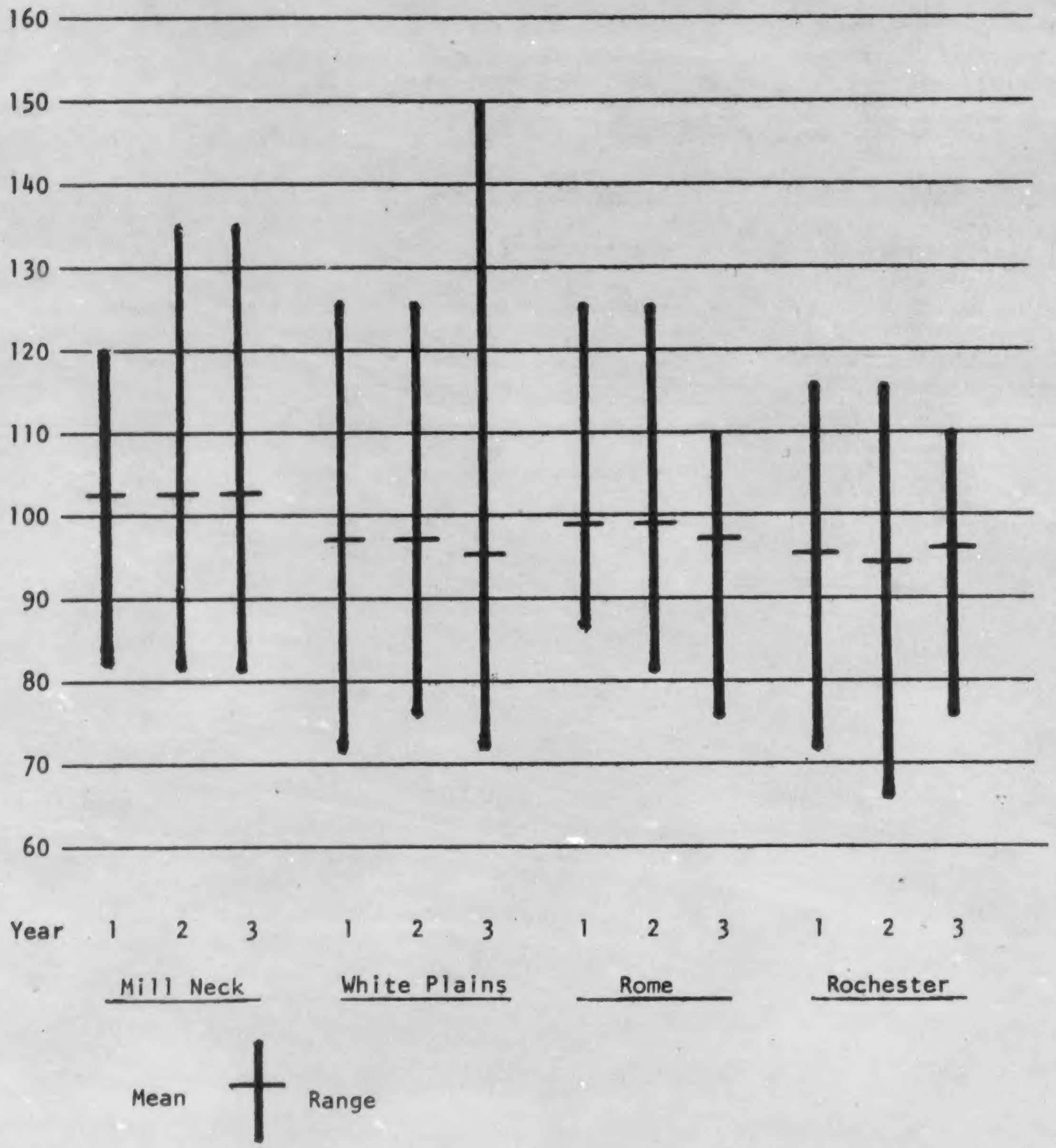
The average IQ's of deaf students entering the programs each year were very similar. The mean for each group on the performance scales of the Wechsler Intelligence Scales for Children (WISC) or the Wechsler Adult Intelligence Scales (WAIS) was 97.6. Not only, therefore, were mean IQ's for new entrants into the programs comparable from year to year, but they fell each year well within the average range for the population at large. Differences observed among institutions remained relatively small, but nonetheless constant over the three-year period. At the same time, variation in mean IQ from year to year within institutions was negligible. Mill Neck students consistently exceeded the performance observed at other schools (N = 100-103). Students from the Rome school fell, on the average, between 97 and 99. The White Plains and Rochester schools fell in the 94-97 range. The range of individual performances increased annually, reflecting no change in lower performance limits but exhibiting a substantial improvement in the upper limit each year. Table III-4 describes mean performance IQ scores and the observed score range by school and year of entry into the program. Individual scores ranged from 70-122 for first year entrants, from 69 to 131 the second year; and from 71-150 in the third. It is clear from the distribution of IQ scores that limited ability is not, in and of itself, an essential determinant of the process of selecting students for enrollment in the occupational programs. In individual cases, such limitations may prompt consideration of vocational training as an alternative to full-time academic pursuits. However, the enrollment, in relatively large numbers, of students with "average" and "superior" intellectual ability suggests that other factors play a significant role in the preference for entry into the occupational education programs.

Academic Achievement

The regular testing programs of the cooperating schools involved great variation in achievement testing practices -- both with respect to the test used from one school to another and with respect to levels and forms of the same test administered from individual to individual within the same school. In the first year of the project, therefore, in order to obtain comparable

Table III-4

Mean and Range of IQ Scores (WAIS, WISC Performance Scales)
by School and Project Year



achievement test data from cooperating schools at all four sites, the same version (Intermediate I Level) of the Stanford Achievement Test (1973 edition) was administered to all members of the target population. Because of the great inconvenience for both students and schools in the annual administration of two standardized achievement tests, it was possible to administer a common test at all four locations only during the first year of the study. At the same time, however, all schools agreed to make school-wide junior and senior test data from the schools' own testing programs available for each year of the investigation. In 1977-1978, testing programs at three locations used various editions and levels of the Stanford Achievement Test (SAT), while at the fourth site the Gray-Votaw-Rogers Achievement Test was administered. In 1978-79, three schools used various levels of the 1973 edition of the Stanford Achievement Test and the fourth school administered only the Advanced Level of the 1964 edition. Despite the great variation in achievement test practices on which project data is based, two important advantages were attained by accommodating local convenience in the second and third years of data collection. The goal of obtaining directly comparable data across participating schools was fulfilled by a portion of the data collected during the first year of the study. In addition, the equally important goal of determining the achievement status of occupational students relative to peers enrolled in other programs at the schools for the deaf was also accomplished. Because all schools were unable for various reasons to use a common level, form, and edition of the same test in their regular testing programs, and because they requested discontinuation of extra achievement testing beyond the first year of data collection, it was decided that access to schoolwide data from local testing programs was the most desirable compromise. All schools provided complete test data on sophomore, junior, and senior classes from their spring achievement testing for the years 1977, 1978, and 1979.

The SAT results on the version of the test administered to all target population members under project auspices during the first year of the study established a number of pertinent facts. First, as expected, performance by the target population was, on the whole, relatively low compared to national norms. The principle purpose of achievement testing was not, however, to indulge in pejorative comparisons of deaf students' academic progress to that of norm groups. It is obviously to be expected that a profound perceptual handicap would create severe obstacles, not encountered by the general school population, to the attainment of language-dependent curricular objectives. The major objective was to examine the comparability of performance among students enrolled in different schools participating in the study. It would be important to be aware of such differences, should they exist, in attempting to evaluate and interpret data related to selection of students for occupational training, progress in occupational training programs, and follow-up data. Generally speaking, the differences observed between programs in SAT performance of students in language and math skills were not great. Nor were differences observed between junior and senior participants in the cooperative programs. The range of mean grade equivalent scores in reading comprehension over all four schools was approximately one grade level. Larger differences were observed on the mathematics subtests. On mathematics concepts the range for juniors and seniors involved maximum mean differences over all schools of 1.2 and 1.8 (in grade equivalent terms) for juniors and seniors, respectively. In mathematics computations these differences rose to 2.3 and 2.1. And on mathematics applications the observed range of mean differences was 1.7 for juniors and 1.3 for seniors. The major source of greater variation among schools on math subtests compared to reading comprehension performances was the consistent superiority of Mill Neck Manor students in mathematics.

Differences among the other schools were not remarkable. Generally speaking, juniors and seniors were equivalent in reading comprehension, both groups at the mid-fourth grade level. On the three math subtests performance by seniors exceeded that of juniors by approximately half a grade level. On mathematical concepts juniors' grade equivalent mean was 4.7 and that of seniors was 5.2. In mathematical applications junior and senior averages were 3.6 and 4.3. Finally, in mathematics applications junior and senior performance produced mean grade equivalents of 6.1 and 6.5, respectively. It is presumed that the reliance on reading comprehension skills required by both math concepts and math applications largely accounts for the size and direction differences observed over all schools between those subtests and the more straightforward math computation subtests.

The basis for determining the level of the test administered to each student in the school's regular testing programs was highly individualized. It was found that groups of students to whom the same test, or the same level and edition of a test, was administered tended to be small and quite heterogeneous with respect to characteristics relevant to this investigation (e.g., school attended, sex of student, grade level, and program placement). Consequently there was little to be gained from the calculation of statistical summaries of test performances observed within such groups. In any event, group comparisons were not the essential purpose for which the data from the schools' regular testing programs were obtained. The purpose was to determine generally where students participating in the cooperative occupational education programs fell within schoolwide achievement test distributions. There is, at least in New York State, a widely publicized misconception that BOCES occupational education centers tend to attract disproportionately large numbers of learning disabled, intellectually inferior and academically deficient students. This investigation reviewed the results of schoolwide testing programs at sophomore, junior, and senior grade-levels for three consecutive years. The purpose was to verify claims by all participating schools for the deaf that the stereotypic image of BOCES occupational centers was not a determinant in the selection of students for occupational training.

The test results for each grade-level in all four schools and in each year of the study are consistent with the schools' claims with the exception of a sudden unexplained change which appears to have occurred with the admission of new juniors in September 1978. This class, the group in which there was least opportunity to engage in data collection, appears to be the only cohort which exhibits test results indicative of relative academic deficiency compared to non-BOCES deaf students. For all other cohorts there was no evidence to support suspicion that the target population was composed primarily of less able or least accomplished students enrolled in the schools for the deaf. The target population tended, on the whole, to fare well in comparison to their non-BOCES peers. It was found that academically superior deaf students (i.e., both in terms of level of test administered and in terms of test performance) were less likely to enroll in the occupational education programs. However, it was also found that members of the target population were not characteristically drawn from among the least able deaf students. On the whole they would appear to come principally from that portion of the population that could be characterized as "somewhat below average" academically. Moreover, they do include in small numbers both relatively superior and markedly inferior performers. Such a distribution sustains the contention that the target population is composed largely of students who are not promising candidates for college or other academically strenuous post-secondary schooling.

Moreover, it also sustains the contention that academic deficiency was not itself the criterion of target population selection. Rather, it appears that the target population was what it purported to be -- students for whom occupational training for successful post-secondary employment was a preferable alternative to preparation for higher education. A major difference was noted for the 1978-79 junior class of deaf occupational education students. At three of the four schools for the deaf, there occurred an unprecedented tendency to limit administration of lower levels of the SAT to BOCES students and higher levels of the test to academic students. This suggests a lowering of confidence in the academic qualifications of students newly enrolled in occupational education programs. In previous years, advanced levels of the test were administered in approximately equal numbers to both occupational and academic program students.

Communication Skills

A rating scale, devised to assess three types of expressive communication (Speech, Manual, and Written) and three types of receptive communication (Lipreading, Sign and Fingerspelling Reception, and Reading), was completed on each target population member each year. On each scale the subjects were given values from 1 (least proficient) to 6 (most proficient) corresponding to a hierarchically ordered set of performance descriptions ranging from severely deficient to highly skilled use of each mode of communication. Ratings on each student were obtained from personnel at the schools for the deaf who were most familiar with and professionally most competent to judge each individual's specific skill. Students were rated by 2 to 5 raters each year; and performance on each scale was determined by averaging rater judgements. Means for the entire target population on each scale varied only slightly from year to year. There was, however, variation within each school and from school to school over time.

On the average target population students are able to speak simple words and some three to four word phrases. They vocalize spontaneously but usually unintelligibly. These students, on the average are barely able to handle standard writing tasks with minimum adequacy. Their writing vocabulary is restricted and they write best about concrete and practical matters. They are able to complete most application forms. The target students, on the average, are able to sign and/or fingerspell in short complete sentences although many use principally short phrases and occasional simple sentences.

The average target student speechreads poorly with many errors, but is able to understand simple sentences and directions. He or she can read signing and/or fingerspelling moderately well, but not without some difficulty. In reading printed matter he or she can understand material of an elementary nature written in short, simple sentences. However, the average target student requires at least some simplification of grammatical and syntactic structures in most printed material.

Students' ratings reflected a wide range of ability on each of the 6 scales. On the Expressive scales the range of students' scores was from 1.00 to 5.80 in Speaking, from 1.00 to 5.7 in Writing, and from 1.7 to 6.0 in Manual Communication. On the Receptive scales scores ranged from 1.3 to 5.75 in Speechreading, from 2.3 to 6.00 in Manual Communication and from 1.3 to 6.00 in Reading.

Comparing expressive and receptive performance for each of the three areas showed that students were perceived as better in each of the receptive areas than in the corresponding expressive area. In each year students received higher ratings in Speechreading than they did in Speaking, in Reading than in

Writing, and in Receptive Manual Communication than in Expressive Manual Communication.

Parental Socioeconomic Status

The socioeconomic status (SES) of both fathers and mothers of target population members was assessed each year of the investigation using Hollingshead's Two-Factor Index of Social Position.[*] The average parental SES indices for the entire target population were relatively constant. On the average fathers fell in the lower-middle class range and mothers in the lower class range. Lower maternal SES is due in part to the tendency for mothers to have no employment outside the home; the Two-Factor Index treats women engaged exclusively in the homemaking role as lower class individuals. Paternal SES differences from school-to-school and year-to-year were consistently small. They ranged from 3.6 to 4.6 on the Hollingshead Index. Maternal SES, though somewhat lower exhibited a similar pattern and fell between 4.2 and 5.0. Average parental SES values by year, by sex of parent, and by school are reported in Table III-5. Inspection of Table III-5 indicates that, in spite

Table III-5

Mean Parental SES Values (Hollingshead Two Factor Index of Social Position) for the Target Population by Sex of Parent, by Year and by School

	Father			Mother		
	Year I (1977)	Year II (1978)	Year III (1979)	Year I (1977)	Year II (1978)	Year III (1979)
Mill Neck	3.91	3.67	3.95	4.36	4.19	4.50
White Plains	3.60	4.36	4.38	4.33	4.50	4.53
Rome	4.31	4.38	4.00	4.56	4.60	4.62
Rochester	4.44	4.57	4.10	4.73	5.00	4.83

---

[*] The Two-Factor Index measures SES on a 5-point scale reflecting a combined contribution of occupational classification and level of education. Socioeconomic categories are defined by intervals on the scale as follows: upper class, 1.00-1.50; upper-middle class, 1.51-2.50; middle-middle class, 2.51-3.50; lower-middle class, 3.51-4.50; lower class, 4.51-5.00.

of relatively small differences in parental SES from site to site, there are consistent trends over time in differences according to location. Rank differences in SES remained constant over time among three locations for both fathers and mothers. Mill Neck, Rome, and Rochester consistently were ranked in that order from high to low. At White Plains, however, paternal SES evidenced an uninterrupted downward trend from highest ranked among the four sites in 1976-77 to lowest ranked in 1978-79.

Fathers over the total target population tended from year to year to rise in socioeconomic status. Between the first and third years lower class representation diminished from 50% to 42%, while middle-middle class membership increased from 14% to 26%, due to a sudden increase noted between the last two project years. Mothers, on the other hand, evidenced a notable decline in SES over the duration of the project. This downward trend is concentrated in variation between the two lowest categories. Lower class membership by mothers rose from 61% in 1976-77 to 77% in 1978-79, while lower-middle class membership diminished from 33% to 9% over the same period.

The proportion of target population families for which SES indices were available for either or both parents was approximately 75% for each year of the investigation. Because of the factors which might influence willingness of parents to provide the type of educational and occupational data necessary to estimate SES indices, the effect of sampling bias on the SES estimates obtained is unknown. It is important, therefore, to note that SES findings must be interpreted as descriptive of the social position for a 75% majority of the parent population. However, no inferences may be drawn from the data obtained regarding the probable SES of the 25% of the parent population who failed to provide SES information.

Course Enrollments

Courses of study at occupational education centers in which deaf students were enrolled varied from year to year. Distinct areas of study in which deaf students participated for at least some portion of the academic year numbered 26 in 1976-77, 21 in 1977-78, and 19 in 1978-79. The most frequently elected courses were autobody, food preparation, data processing/keypunch, office services, and carpentry. Autobody consistently attracted 13-15 students and food service courses enrolled 9-12. There was a notable decline in data processing/keypunch courses over the duration of the study from 15 in the first year of the project to 5 in the final year. Carpentry, the only crafting trade that attracted large enrollments, increased dramatically in popularity from 3 students in 1976-77 to 13 in 1978-79. Other traditional fabricating and technical trades -- welding, plumbing and heating, electricity, machine tool, mechanics, masonry, radio/TV repair, photography, cosmetology, etc. -- achieved enrollments of no more than one or two students per year. Generally speaking, enrollment patterns were for approximately half the students to take one of the three most popular types of programs (autobody, food related, or business related) and for the remaining half of the students to be distributed widely and in small numbers over the rest of the programs. There was, it might be observed, a tendency for sex-stereotypes to prevail in course selection; girls accounted for most enrollments in business practices courses and boys alone participated in mechanical trades training. Only in food processing courses of various types were sex ratios more balanced.

Changing from one program to another, subsequent to first enrollment at the occupational training centers, was not an uncommon event, but neither was it a particularly serious problem. During the first (1976-77) year of the investigation students changed from one specialized training course to another.

In the second year (1977-78) there were ten such changes: and in 1978-79 there were six changes. It may be noted that there appears, over time, to have been a gradual clarification or increasing enforcement of the selection criteria for admission to BOCES programs and an apparent effort to sustain existing placements. Not only were the number of complete writhdrawals from BOCES and the amount of transferring from course to course less common in the final year than in preceding years; but all six lateral transfers in the final year of the study occurred within the first seven weeks of the school year.

In addition to course changes during the school year, there was a small amount of voluntary transfer between completion of the junior year and beginning of the senior year. However, after accounting for tranfers attributable to permanent selection of a specialized program by exploratory students, changes necessitated by discontinuation of program offerings, and administrative reassignment of the students to special programs, only three transfers each year could be described as permanent, voluntary tranfers from one specialized course of study to another. Taken altogether, the patterns of enrollment, withdrawal, and course-changing behavior by deaf students participating in the cooperative training program suggest a relatively high level of stability in target population trends, both for the population at large and for individual programs at each location.

INSTRUMENTATION

It has already been noted that a great variety of complex objectives were pursued in the effort to reach a comprehensive understanding of events influencing the development of deaf youngsters mainstreamed in cooperative occupational education programs. The instrumentation required to obtain data appropriate to each of those objectives was extensive. Answers to most of the questions raised in this study could not be retrieved by recourse to readily available standardized measures. The development and adaptation instruments suited to project aims, therefore, was a major undertaking. A substantial part of the first year's work was devoted to the construction of instruments, as well as to the discovery, review, and adaptation of appropriate measurement devices already present in the published literature. Moreover, because the purposes of this study were primarily descriptive and heuristic, it was continually necessary to evaluate throughout the study the adequacy of instruments in use--revising, expanding, and (if necessary) replacing them in order to satisfy the intent behind their use and to respond to unexpected contingencies arising from their use. Furthermore, extensive efforts were made to insure maximum useability and validity of evidence gathered through instruments devised for this study. Before any data collection device was put into full scale use in the study, it was first subjected to pilot-testing or limited field trials under conditions conducive to establishing its suitability and to identifying need for improvement or revision.

Types of Instrument Used

The purposes of the study and the kind of information required to fulfill those purposes required the extensive use of interviews. The interview was, in fact, the most frequently used method of data collection throughout the entire course of the study. Considerable use was also made of questionnaires, when the information sought could be unambiguously classified or coded according to predefined response categories. Some purposes required direct observation, recording, and interpretation of behaviors exhibited by subjects in the educational environment. In these instances schemata representing behaviors of interest were defined and observation schedules were constructed in accordance with them. Another device used in this study was the rating scale. Generally speaking, it was used for performance evaluations and to assess opinions about the characteristics, operation, and outcomes of the occupational education programs. Finally, a wide range of objectively scorable standardized instruments were administered during the course of the study to the target population of hearing-impaired occupational education students, to their hearing peers at the occupational centers, to deaf students enrolled in other programs at the schools for the deaf, and to educational specialists both at the schools for the deaf and at the occupational education centers. In almost all instances of standardized testing with deaf students elaborate pains were taken to adapt content, format, and administrative procedures to the test-taking limitations of hearing impaired secondary students. The purpose of these measures was to obtain for the target population a reasonably comprehensive profile of their cognitive, social/personal, and career/occupational development. Standardized instruments administered to hearing students and/or educators were used principally to measure such variables as knowledge and attitude about deafness, social acceptance and sociometric status of deaf students.

Interviews

All interview forms used throughout the study were original and were constructed specifically to satisfy its uniquely defined objectives. Essentially the same structural design and procedural features were imposed on all interviews in order to maximize the relevance and objectivity of recorded responses by standardizing interview administration. Interviews were, for the most part, focused with respect to content. They were also designed, however, to permit subjects to formulate their own unrestricted response to open-ended questions. This semi-structured form was deemed essential to insure that responses were directed to the explicity defined objectives of the study without exercising undue control over subjects' freedom of response. In addition to open-ended questions, the interviews also included some questions designed to elicit structured responses of the rating scale, dichotomous choice, or multiple-choice variety. Such questions were included primarily to control the direction of the interview rather than the subject's freedom of response. Consequently subjects were also asked to explain or elaborate on their choice of a particular response option.

Although interviews were employed to investigate a wide range of topics and objectives, materials were designed to cover individual topics in depth and to limit inquiry in a single session to questions related to a single topic. The forms devised for each interview included the interview schedule and an accompanying protocol. The schedule was the instrument itself and contained both questions asked of each respondent and space for recording the subject's responses. The protocol was a set of detailed instructions to the interviewer. It included a statement of the purpose of the interview as a whole and of each question on the interview schedule. For each question it also provided explicit instructions for presentation of the question to respondents, for recording responses, and for the use of probes to clarify or amplify responses. When different groups of subjects (i.e., students, parents, and educators) were to be interviewed on a common topic for the same purpose, separate forms of the schedule and protocol were designed for administration to each group.

In a number of instances interviews were conducted on the same general topic in successive years of the study. When this was the case complete coding, summarization, and evaluation of data already collected formed the basis for completely revising and expanding the schedules and protocol before further interviewing was conducted.

Finally, each year of the study, prior to conducting interviews in the field, interviewers participated in training and practice sessions. These sessions involved instruction in the use of schedules and protocols, as well as interview simulation activities to sharpen skills in interview technique.

Observation Schedules

Observation methods were used to gather data for two major purposes. The first of these was the investigation of instructional strategies employed in occupational education courses and the responses or reactions they elicited from deaf students in the cooperative program. The second purpose was the observation of socialization behaviors of deaf students and their non-handicapped peers in the occupational education environment. For both purposes, the observation schedules required observers to record discrete behaviors according to pre-coded categories and to describe anecdotally the initiation, process, and termination of observed events. In order to verify apparent meanings of observation data, the observation schedules were accompanied by interview schedules and protocols designed for use with students and teachers immediately following observation sessions. These procedures were subjected to local field trials in Foreman Center courses at the Rochester site to test the adequacy of behavior codes and the manageability of the observation schedules before full-scale use at all sites was launched.

Questionnaires and Rating Scales

Locally devised questionnaires and rating scales were designed primarily to elicit factual and attitudinal information that required no more than categorical responses, readily codable according to exhaustive and mutually exclusive classification schemes. The occasional free-response (constructed response) items used in these instruments required subjects only to state in simple terms the specific nature of factual events, their personal reasons for specific courses of action, or their feelings about particular features of the cooperative program. In order to establish the pertinence and appropriateness of both the content and form of these instruments for the populations with which their use was projected, consultations were undertaken with experienced professional personnel in deaf education. This was especially crucial with questionnaire forms designed for use with members of the target population of deaf students. Provisions were made for administration of these forms to the deaf on a one-to-one basis or in small group settings, so that directions, content, and response procedures could be clarified and interpreted to deaf students by those experienced in communicating effectively with the hearing-impaired.

Standardized Tests and Measures

Standardized tests of intellectual aptitude and academic achievement selected for use in the project were those whose use with the deaf has been established by tradition. These included, as already mentioned, a) the Performance Scales of the Wechsler Adult Intelligence Scales (WAIS) and the Wechsler Intelligence Scales for Children (WISC), and b) various levels of the Stanford Achievement Tests and (at one school) the Gray-Votaw-Rogers Achievement Test. In all cases, these tests were administered either by school psychologists experienced in testing the deaf or by other deaf education personnel in accordance with each of the school's standardized testing policies and practices.

Extensive efforts were also made to assess the career development and experience of target population deaf students. For these purposes, with the publishers' permission, several instruments were adapted for use in whole or in part with deaf students. These instruments included the _Career and Educational Aspirations Questionnaire_ (by permission of Harcourt, Brace, Jovanovich), the _Hall Occupational Orientation Inventory_ (by permission of Scholastic Testing Service), Crites' _Career Maturity Inventory_ (by permission of CTB/McGraw-Hill), and Super's _Work Values Inventory_(by permission of Houghton-Mifflin). In all cases administrative procedures, directions to respondents, item form, vocabulary level, grammatical constructions, and semantic structures were adopted for use with deaf secondary students. In all cases, the services of an experienced deaf educator were engaged to supervise or personally perform the necessary revisions. When completed, the revised instruments were pilot-tested individually and in small groups with deaf high school students and further edited to overcome problems experienced by the test administrator and examinees. The use of these instruments for purposes of actual data collection was similarly supervised or conducted by experienced personnel (i.e., program coordinators or a project staff member experienced in interpreting for and counseling with deaf students).

Instruments adapted or designed to measure educators' and regular students' knowledge of deafness, attitudes toward deafness, social acceptance of the deaf, and sociometric status of deaf students in the hearing environment could not be subjected to the same rigorous preliminary field trials as measures designed exclusively for direct administration to deaf students. It was felt that it was most improtant to devote the time available for such purposes to instruments to be administered to the target population. Continual efforts were made, however, to examine and evaluate the psychometric properties of these instruments on the basis of data resulting from their actual use in the data collection process. Nonetheless, in the process of constructing the social acceptance and sociometric devices, item selection was empirically validated by preliminary investigations into the relevance and scalability of item content. Details of these efforts are reported in those sections of the report that deal with the description and discussion of specific research findings.

Generally speaking, a strong effort was made to establish and maintain the integrity of research data collected during the course of the study. Within the constraints imposed by time, by availability of subjects, and by the purposes to which the study was devoted, maximum resources were allocated to the development and improvement of the instruments through which project data were accumulated.

SECTION IV

PHILOSOPHICAL VIEWS

Given the motivational impact of ideology, it would be hard to exaggerate the importance of attention to similarities and differences of perspective within and among the groups of people in a position to influence and prescribe a child's educational experience. It may be argued that ideological unity among those responsible for decisions that affect the educational experiences and accomplishments of any group of children is important to the effective provision of educational services. Schools must be organized and staff, classroom environments planned, curriculum designed and implemented, and pupil progress accounted for. The community, moreover, must be persuaded to fund not only maintenance of existing programs, but needed improvements and innovations as well. A common commitment is required to accomplish these objectives effectively; and a unified commitment is dependent on shared goals. However, the general educational literature in recent years provides ample evidence of the fact that educators' views on educational goals are highly pluralistic. Wide differences of opinion exist regarding the function of education in the child's life and in society at large. Such differences are found within and among groups of educators working at various grade levels, in various instructional fields, with different student populations, and in a variety of professional roles in the organizational hierarchy of the schools. Less is known about the degree to which other participants in the educational process (e.g., parents and students) share goals and objectives regarding the purposes of education. Also, little is known regarding the degree of consensus among these individuals or groups of individuals regarding goals and objectives appropriate for disabled students.

GOALS AND OBJECTIVES

For those reasons, the inquiry into the mainstreaming of deaf high school students in occupational education settings began by asking some very basic questions of educators, of parents of handicapped students, and of handicapped students themselves. Among educators, these questions were addressed to specialists in both deaf education and occupational education. Moreover, educators contacted in both areas included administrative/supervisory personnel, pupil personnel services staff, and instructors. In the first year of the study, a sample of 307 persons were individually interviewed. These included 47 administrators, 47 pupil personnel workers, and 108 teachers from the occupational education centers and schools for the deaf. Twenty-eight parents of hearing impaired occupational education students and 77 deaf students enrolled in occupational courses were also interviewed.

The administrative group consisted of chief school officers, including superintendents and assistant superintendents, building principals, and program or departmental supervisors. Workers in pupil personnel service roles included nurses, psychologists, audiologists, speech therapists, program coordinators, residential and educational counselors, and dormitory supervisors. The teacher group consisted of both specialists in the academic instruction of the deaf and occupational education teachers. The students included all high school juniors and seniors belonging to the target population of deaf students enrolled in the program. The parents were a 30% random sample drawn from the population of target students' parents.

For purposes of replication, additional interview data was gathered systematically from student and parent groups in the second year of study. This sample included all 76 students in the target population and 25 parents randomly selected from the target population. In the third year of the study parent and student views on objectives were pursued less directly. They were deduced as implications drawn from reactions to operational features of the cooperative programs. It may be noted here that the attitudes, concerns, and expectations elicited from parents and students regarding program process and outcome throughout the project were continually consistent with interview results regarding educational objectives. Although interviews conducted with educators in the second and third years did not elaborate formally on the program's goals and objectives, views expressed by all key personnel in initial interviews were verified during second and third year contacts. Those from whom such verification was sought included principal policy makers, persons directly responsible for day-to-day administration of programs, counselor-coordinators, and teachers of target students in the occupational education centers and in the schools for the deaf. In addition, continuous surveillance was maintained over institutional practices in order to identify policy shifts indicative of changes in program goals.

Interviews were designed to ascertain respondents' positions vis´-a-vis´ the goals of education in general, the goals of occupational education, and the relationship between the goals of academic and occupational education. Similarities and differences in goals for deaf and hearing in both academic and occupational education were considered along with exploration of the implications attributed to mainstreaming deaf students in regular occupational education courses. The interviews were of the open-ended (or free response) variety, but structured or focused with respect to topical content. Separate interview schedules were developed for each of the major respondent groups--administrators/supervisors, pupil personnel staff, instructors, pupils, and parents. Each schedule was accompanied by a detailed interviewer protocol, explaining the intent of each question and the procedures to be employed by the interviewer in focusing interview content, in probing for response clarification or amplification, and in recording responses.

General Goals of Education

The aims and objectives of regular education, as perceived by parents of deaf pupils and pupil personnel services (PPS) staff (both at schools for the deaf and the occupational education centers) were remarkably similar. Forty percent of interviewees in both groups stressed their concern for cognitive development. Their principal interests included growth in general knowledge and information, development of specific subject matter competencies, and promoting such intellective abilities and skills as application of knowledge, reasoning, and problem-solving. Expectations regarding intellectual growth were overwhelmingly and almost exclusively futuristic, emphasizing the importance of academic progress to eventual success in the pursuits of adult life. Only occasionally did they also mention such specific and temporally immediate advantages of learning as the value of language skills to communication. On the other hand, over 90% of both parents and PPS staff spontaneously stressed noncognitive objectives, particularly those taken to be necessary for the eventual assumption of social and occupational roles in adulthood. Most commonly emphasized were development of favorable work habits and attitudes, personal independence and self-sufficiency, a sense of responsibility, and adjustment to social norms regarding interpersonal behavior. Indicative of these responses were remarks such as "to prepare for a job," "to help the individual reach desired goals in life" and "to learn to compete." Similar responses were obtained from a second group of parents interviewed in the following school year. A slightly higher incidence of concern for academic objectives was accompanied by a corresponding decline in the mention of affective goals. Relatively speaking, however, their responses continued to reflect concern for personal and social maturation over intellectual considerations by a two to one ratio.

Somewhat surprisingly, teacher concern for social and personal development (80%) also substantially exceeded the frequency with which instructors emphasized intellectual growth (39%). Although slightly less often concerned with noncognitive goals, instructors at schools for the deaf expressed no higher level of interest in cognitive goals than parents and PPS staff. Occupational education teachers, on the other hand, did mention cognitive objectives more frequently (51%) than their academic colleagues at schools for the deaf.

Finally, administrators at both types of schools mentioned both cognitive and noncognitive objectives with greater frequency than any other respondent group. Nevertheless, the generally observed trend to focus less frequently on intellectual aims (70-75%) than on personal/social development (96%) also characterized administrator responses. At the same time, however, this group appeared less often to view the two emphases as dichotomous alternatives and described them in more complimentary terms. Administrators also tended to view personal/social development from a less occupationally-oriented perspective than any other group.

Parents of deaf students enrolled in regular occupational education courses did not perceive differences to exist in educational goals and objectives for deaf and hearing students. This finding, of course, may be representative of the views of parents of deaf (or other handicapped) pupils in general. These parents' beliefs in the similarity of educational goals for the handicapped and nonhandicapped children may be one of the factors that account for their children's enrollment in the mainstreaming program in the first place. Even parents who did mention language and communication problems as barriers to mainstreaming appeared to view such difficulties as more related to the individualization of instructional methods than to instructional goals. Only a few perceived a unique emphasis on language, speech instruction, and communication skills as a qualitatively distinct function of education for the deaf. Such respondents perceive these emphases as ends in themselves, involving explicit instructional efforts to promote acquisition of skills which hearing children normally attain through casual experience. It is especially notable that parental responses did not characterize deafness as an essentially deprived condition restricting the nature of educational objectives as a direct consequence of limitations due to hearing loss.

These findings indicate that, in relation to current educational practices, these parents of deaf students view the goals of education as similar for all students. However, it was also of interest to determine if parents believed the goals and purposes of education for the deaf should be different from those for hearing students. This question was asked of the parents interviewed in the second year. In this sample, 76% of the parents indicated that the goals of education should not differ for deaf and hearing. An additional 20% of the respondents said that the goals and purposes of education for the deaf should be different, citing as reasons the lower achievement capability of deaf students, the temporal lag in their educational progress, and the special communication problems of the deaf. The remaining 4% qualified their responses, suggesting that some of the purposes and goals of education for deaf students should be different, while others should not.

School administrators, PPS staff, and instructors at both types of schools overwhelmingly deny the existence of goal differences for deaf and hearing. There were, however, some differences in the levels of agreement observed among these groups. Teachers of the deaf (19%), and PPS staff (17%) generally noted objectives unique to deaf children most frequently. BOCES teachers (8%), along with administrators at both types of schools (10%), were least inclined to differentiate between objectives for deaf and hearing. At the same time, however, PPS staff and administrators (30-40%) frequently qualified their judgments. In doing so they most often mentioned differences in the degree of emphasis placed on language learning, the existence of lower performance expectations for deaf pupils, and greater concern for the social and personal development of deaf children (especially in relation to coping with the hearing world). Some educators also indicated personal adjustment to handicap and self acceptance as a special educational goal for deaf children.

Aside from special training in language and communication skills, the means for accomplishing "objectives" such as these were not mentioned. It may be that these comments should be interpreted less as a statement of objectives than as a reflection of awareness of problems faced by deaf students, of dissatisfaction with their developmental progress, and of frustration over the elusiveness of educational solutions. Indeed, they are areas highlighted, in our examination of attitudes toward the deaf, as factors related to unfavorable views of the deaf in general and in the mainstream environment. The "noncognitive" emphasis of general educational objectives noted above are consistent with the types of reservations voiced by administrators and PPS staff regarding similarities of objectives for deaf and hearing. The extent to which formal educational procedures should be systematically formulated and implemented for the accomplishment of verifiable outcomes in areas of personal and social development can be debated. It seems quite apparent, however, that a majority of the parents and educators surveyed recognize the urgency of such needs and feel a special responsibility for helping to satisfy those needs in the case of handicapped students. This suggests the need for formalizing efforts (1) to evaluate common and individual deficiencies, (2) to formulate specific plans and provisions for promoting verifiable outcomes (e.g., in the process of preparing IEP's), and (3) to monitor change continuously for indications of boht progress and/or the need for further intervention. This suggestion involves an approach akin to client "staffing" in a developmentally oriented vocational rehabilitation workshop or pupil "staffing" in a development preschool. It is also in marked contrast to the traditional educational model, in which each provider of professional services and instruction takes individual and independent responsibility for promoting personal and social maturation of pupils.

Goals of Occupational Education

Parents emphasized specific preparation for gainful employment as the primary outcome of the occupational education experience. Comments focused on the attainment of skills required to obtain and keep a specific job or on the achievement of entry level qualifications in skilled trades and other occupational specialties that require technical, pre-employment training. A smaller number of parents mentioned employability, self-support, occupational exploration, and choice of a course of study leading to some unspecified type of employment. In all, two-thirds of the parents interviewed indicated in some way that actual employment was the goal of occupational education. One-third described broader purposes like the development of productive work habits, skills, and attitudes. The principal differences among parental views essentially reflected variation in the extent to which parents emphasized particular aspects of the relationship between training and employment. Consideration of training objectives independent of employment goals was, however, virtually non-existent.

Parents were also asked to describe specifically their perception of the objectives of occupational education and the reasons for their children's enrollment in the occupational programs. Again two-thirds of the respondents indicated employment goals and job or career-oriented reasons. Moreover, in response to the same questions, 65% of the deaf students cited job-training or employment objectives, and 85% cited employment goals as their personal reasons for participating in occupational education programs. These findings were replicated exactly in subsequent interviews with the second year sample of parents and students.

Parents were also asked their opinions regarding the level of job skills to be developed in occupational training programs. In the initial sample, the majority of parents (57%) expressed one of two views: (1) students should achieve "entry level" skills; or (2) skill mastery should parallel the student's potential, interests, and aspirations. A total of 68% of the second sample of parents, interviewed one year later, responded in the same vein.

Educators differ sharply from their clientele (parents and students) with respect to these same issues. Less than one half of either occupational education instructors or teachers at the schools for the deaf cited general preparation for employment (developing habits of work, work attitudes, etc.) as a goal of the occupational education experience. Even fewer mentioned specific employment objectives like training in skills required to qualify for particular jobs. Among teachers who actually did mention specific employment-related objectives, occupational teachers and teachers of the deaf tended to differ in the level of technical skill implied by their responses. Occupational teachers focused on the acquisition of trade-level skills applicable to a wide variety of specific job descriptions. Deaf educators in this group endorsed narrower preparation for specific jobs and expected a lower level of expertise to result from the training experience. In addition, about 15% of the teachers at both types of school introduced mention of objectives which neither parents nor students noted, i.e., the "self-actualizing" effects attributable to a sense of personal fulfillment experienced in occupational training.

While the responses of pupil personnel services staff at both types of schools generally resembled teachers responses, administrators tended to be idiosyncratic in their responses. Although the content covered by administrator responses included the objectives proposed by the other professional groups, much more variability was observed from school to school. Administrator perspectives, moreover, varied independently of both types of school and the pairing of schools in any particular cooperative arrangement. In other words, no strong consensus in this respect was found among administrators at schools for the deaf as a group or at the occupational education center, or between administrators at the collaborating pairs of schools at individual program sites. Variation from one program site to another may be expected as a consequence of local conditions--metropolitan areas vs. rural, upstate vs. downstate, differences in economic conditions, employment opportunities, life-style, etc. Differences between schools affiliated for the purpose of serving the same pupil population, however, especially at the organizational and policy making levels, is potentially more troublesome. The absence of strong and explicit accord regarding the role of occupational education in the total education experience of handicapped students, especially at the negotiating level, may adversely affect the opportunity and inclination for cooperation at other levels. Without concurrence among administrators to provide mutual support for role-defining objectives, a major incentive to engage in constructive dialogue at the instructional level is lacking.

Although differences in perspective among the groups surveyed do not necessarily imply either inconsistency of objectives or incompatibility of outcomes dependent on them, two important points do deserve consideration. First, disparities (real or apparent) between the expressed intent of the client in seeking educational services and the purposes for which providers actually render services ought not to be ignored. In our compulsory education system, dominated by the liberal arts tradition, educators have held the responsibility not only for the accomplishment of education goals, but for their formulation as well. The academic high school, as a product of this tradition, is designed to affirm the intrinsic merits of learning, both for its own sake and as the touchstone of formal preparation for adulthood in society. The educator's role as a formulator, proponent, and facilitator of the school's goals is consistent with the nature of the institution. Elective educational alternatives, like occupational training, implicitly owe their existence to recognition and acceptance of self-determination by consumer, as well as producer, as a principle of objective-setting. The consequence for elective education, e.g., occupational, is a greater responsibility for disclosure of predetermined objectives and/or adherence to expressed objectives of the clientele. Hidden agenda, especially if they may supersede the client's own goals, are contrary to the freedom of discretion implied by the availability of elective alternatives to the academic high school. These considerations have serious implications not only for the development, modification, and maintenance of courses of study, but for the manner and circumstances in which they are offered. In this context, differences observed in emphasis on various objectives between educators, on one hand, and students and parents, on the other, is a matter for serious reflection. Greater student and parental concern for employability and employment cannot be dismissed, for example, in favor of other educational benefits which might accompany training in skills with low marketability. This is potentially a more crucial consideration for the handicapped than for regular students. As one occupational education administrator who shares this view observed, highly specific job preparation could be crucial to the successful occupational education of hearing impaired and other handicapped students because of the relative difficulty and the discrimination they face in a highly competitive job market. He indicated that less specific objectives may satisfy the occupational education needs of nonhandicapped individuals, because employers appear more willing to invest in the further training of nonhandicapped workers. He suggested that the competitive disadvantage of the handicapped might be diminished by pre-employment training which notably alleviated employer training costs and helped neutralize the presumed financial risk of hiring handicapped applicants.

Besides the matter of responsiveness to student and parent expectations the variability of educator aims, both among administrators as a group and between administrators and their subordinates, deserves attention. The lack of uniformity among administrators on major goal-dimensions suggests an absence as yet, in occupational education, of the kind of common purpose that must underlie the collaborative allocation of mutually complementary resources. The continuity and stability of program and policy over time become uncertain--either in principle or in practice--in the absence of the unifying influence of common purpose.

In addition to obtaining spontaneous expressions of occupational education objectives, the interviews were designed to probe explicitly for priorities assigned to (1) cultivating work values and attitudes (i.e., promotion of the work ethic); (2) providing opportunities for occuaptional exploration; and (3) developing specific, job-oriented skills. As might be expected, more clearly defined response patterns emerged from the more narrowly focused probes. This strategy differentiated educators both according to the nature of their role in the educational hierarchy and by type of school. The lack of uniformity noted above was further confirmed.

It should be noted that respondents were encouraged to elaborate on their responses and permitted to express a preference for one or more of the three occupational education objectives. This avoided the artificiality of a forced-choice framework, which would require selection of one alternative to the exclusion of others. As a result subjects were able to indicate a preference for any objective or combination of objectives to which they subscribed. The realtive importance of an objective, therefore, was measured by the frequency with which it was chosen, rather than by the intensity of interest it elicited in individuals.

Parental preoccupation with the more tangible and specific aspects of employment preparation was noted again and contrasted sharply with educator's priorities. As a group, only administrators at schools for the deaf resembled parents in the relative frequency with which they attached similar importance to the same aims. Of all educator groups interviewed, only administrators from schools for the deaf expressed an overwhelming concern (75%) for training in specific skills required for employment under particular job titles. Moreover, two-thirds also emphasized the importance of occupational education as a developmental opportunity for exploration of job-related abilities and interests. Although frequently cited, the cultivation of work values was viewed most often as a second-order objective, accompanying exploration and skills training and mediated by them.

On the other hand, all groups of occupational educators--teachers, PPS staff, and administrators--stressed the role of work habits, attitudes, and values. They were mixed in the extent of their commitment to exploration and skills training. Rather surprisingly, among the different groups of occupational educators, instructors were least concerned with the relationship between course content and future employment.

Finally, PPS staff and teachers at schools for the deaf most often viewed the occupational education experience as an exploratory opportunity. Compared to teachers, however, PPS staff were more often interested in the development of work skills and less frequently concerned with the issues of values.

The impact of the variability observed among groups is admittedly conjectural. These relationships, however, do bear careful and continued examination. The criteria of success are inextricably linked to objectives. And it is distinctly possible, if not probable, that differences in anticipated outcomes could contribute to substantially different conclusions regarding the success of occupational education. It has, for example, become abundantly clear that parents of deaf students and deaf educators experience ambivalence in diminishing the time devoted to basic academic education in order to procure for students the benefits of occupational education. Confusion regarding anticipated benefits could lead to dissatisfaction and greater reluctance to make use of such mainstreaming opportunities. Occupational education enrollments are negotiated through the administrative channels of schools for the deaf. Whether administrators' views influence, reinforce, or merely reflect parental expectations they do not entirely coincide with priorities expressed in other quarters. Whether there can or should be greater convergence of perspectives is itself an unresolved question However, it is an important question, one that merits more explicit and systematic attention in the future. Conceivably it could be one of the more crucial issues in an emerging dialogue between special and regular educators responsible for the development and delivery of mainstream educational services to the handicapped.

The relationship perceived between academic and occupational education accentuates the disparity of perspective between line staff in occupational and deaf education. Generally speaking they were described as sharing responsibility for promoting personal development and adjustment and for socialization of students to adult roles. Differences between academic and occupational education focused on the distinctions between general vs.

specialized training, technical and terminal training vs. preparation for higher education, basic cognitive skill vs. psychomotor skills and applied knowledge. Although administrators in both settings adopted a breadth of perspective that accommodates both shared and independent functions, instructors and PPS staff responded less flexibly. There was a notable tendency for occupational educators to emphasize the shared responsibility for contributing to affective objectives. Deaf educators on the other hand stressed differences associated with subject matter content. In other words, occupational education personnel tended to define occupational education as an extension of academic education in terms of mutually shared objectives. Deaf educators, on the contrary, were more inclined to represent it as a distinct alternative to the academic education of deaf students. In the light of such a difference in perspective regarding the relationship between academic and occupational education experience, there would appear to be little incentive for collaborative efforts to identify and consciously pursue integration and continuity between these two aspects of the student's educational development. It is questionable, moreover, if such a synthesis has much prospect of being successfully engineered by administrators or program coordinators, without the direct involvement of instructional staff. Direct, continuous, cooperative communication and planning among instructors would appear to be an urgent necessity, if there is to result more than incidental mutual reinforcement of academic and occupational programs.

The Advantages of Mainstreaming

Finally, the goals of occupational education of handicapped students in the mainstream were explored. Those interviewed were asked to elaborate on the anticipated benefits and disadvantages of enrolling deaf students in regular occupational training courses.

Parents (80%) and students (87%) interviewed during the first year equated "advantages" with objectives. Their responses focused on occupation-related learning opportunities and the content of courses of study. No more than 25% of parents or students mentioned the value of integration with hearing students or the opportunity it afforded for adaptation to a hearing environment. And when they did, it was often in conjunction with occupational objectives. Interviews with the second sample of parents produced the same kind of result. Seventy-six percent of the parents interviewed indicated that occupational education for deaf students at the occupational centers aimed at improving employment opportunities and independence compared to 12% who cited advantages related to adjustment within a hearing environment. The second year sample of students cited occupation related learning opportunities most frequently (93%) as their reason for attending the occupational education center. None cited the advantage of integration with hearing peers as a personal reason for participating in the programs.

Educators, on the other hand, were preponderantly concerned with the advantages of integration and interaction with hearing peers or, equivalently, with opportunities afforded by the mainstream environment for personal and social maturation. Fewer than 30% cited vocational or career development considerations alone or in connection with the benefits of integration. Nowhere else in the data on objectives was the disparity between educator responses and parent/student responses more distinctly drawn. And nowhere else were educator responses more consistent and definitive in their focus. Educators viewed the integrated experience in occupational education primarily as a point of entry for deaf students into the hearing world and an immediate source of opportunity to cope with societal demands. For students and parents, however, the distinction between the hearing world and the work world was less clearly defined. They appear, except in rare instances, not to separate the opportunity to become gainfully employed from the opportunity to cope and compete in the hearing environment.

The immediacy of educator aims and the futuristic emphasis of parental views is further exemplified in the disadvantages they attribute to the programs. Communication difficulties and their adverse effects on school learning are the overwhelming preoccupation of professional staffs at both types of school. For many deaf educators, this problem translates into sacrificing basic academic training in favor of dubiously effective training in applied skills. Parents, on the other hand, were most concerned with the adequacy of the occupational education courses as a means for enhancing employment potential. In their view, disadvantages associated with occupational training were not specific features of the program itself, but the prospect that training might fail to result in actual employment. It is clear that parental willingness to permit or encourage the pursuit of occupational training is contingent on the promise it holds for averting an otherwise unpromising future.

CAREER LEARNING-MATURATION AND CAREER CHOICE

Participation in an occupational education program is commonly believed to influence growth toward career maturity. In order to clarify these beliefs with respect to the career development of deaf students enrolled in the cooperative programs administrators, pupil personnel service workers, teachers, parents, and students were interviewed. Interview questions focused on both the learning-maturation and career choice features of three aspects of the career development process: (1) its stages, (2) its nature, and (3) its relationship to the educative process. These data were obtained during the same interviews as the data on goals and objectives, and they are based on the same sample of 307 subjects.

The Nature and Stages of Career Maturation

Approximately one-half (21) of the administrators conceptualized the process of career maturation in a life span perspective. While a number of the administrators were unable to specify their beliefs about the process of career development with a high degree of precision, the general underlying theme of their comments suggested a belief in the lifelong, developmental nature of the process. Most of the administrators recognized the necessity of career decisions, acknowledging that involvement in work implies choice making. Although only a few of the administrators emphasized the importance of "a" choice in the traditional sense of a definitive commitment, many seemed to retain more conventional notions about the stages of career development. While their characterization seemed to highlight the importance of that initial choice, they clearly specified that occupational life involved a continuous succession of choices.

By those able to characterize their view of the process, three or four broad stages were repeatedly mentioned in one form or another: (1) early childhood work fantasies, (2) identification with the work of parents through parental modeling of work roles, (3) expansion of knowledge about work roles through informational exposures, and (4) actual trial-exploratory work experiences. Beliefs expressed about the stages of career development seemed to focus on the influence of information acquired about work as the individual's world expands through experience.

Pupil personnel service workers responded in much the same vein as administrators. Of the 47 pupil personnel service workers, 22 believed career maturation was a continuing, ongoing process over the life span. Their general developmental characterization of the stages of career maturation essentially followed a pattern which included fantasy, exploration and specificity of choice.

Both administrators and pupil personnel workers regarded career maturation as an individual process, and both groups referred frequently to the importance of exposure to career information. Both groups emphasized four elements that should be stressed in career maturation activities: (1) keeping as many options open as possible, (2) learning about self, (3) setting realistic goals, and (4) developing an awareness of career opportunities.

Relationship to the Educative Process

Administrators agreed with the relevance of career maturation to the educative process. Twenty-four(24) administrators indicated that career maturation should be an integral part of the educative process, while another 13 considered career maturation a supplemental function of educational experiences. Administrators were well aware of the problems of integrating and coordinating career education activities with other aspects of the educative process, and many indicated the need to plan and develop career education activities that contribute to the career maturation process.

The pupil personnel staff were more widely separated in their beliefs (as might be expected from such a diversified group of helping service workers). Approximately one-third (13) regarded career maturation as an integral part of the educative process; another one-third (16) viewed career maturation as a supplemental aspect of the educative process; and the remaining one-third (15) were either unable to detect a relationship (7) or viewed career maturation and educational experiences as separate events (8). No substantial differences were noted between pupil personnel staff in the occupational education centers, and the schools for the deaf were slightly more favorable to belief in the importance of education as an integral or supplemental part of the career maturation process.

Comparing the Career Maturation of Deaf and Hearing Students

It was also of interest to ascertain if the career maturation process was perceived as essentially the same for both deaf and hearing students. Approximately 78% of the administrators indicated that the process was basically the same for both deaf and hearing students. In seven of the eight institutions surveyed, approximately 80% of the administrators believed there were no differences in the career maturation process for deaf and hearing students. At the eighth institution, only 50% of the administrators considered the career maturation process the same for both deaf and hearing students.

Of those administrators who suggested that the process was different in some way, most felt that the process is harder and/or slower for deaf persons but not essentially different. A few indicated that a hearing deficiency makes it difficult for students to pick up information that can foster the career maturation process. There was some indication that administrators believed deaf children generally mature at a slower rate.

Although a majority of the pupil personnel workers (approximately 61%, or 29 of 47 respondents) viewed the career maturation process as the same for deaf and hearing students, the percentage is notably below that of administrators who share the same view. Moreover, PPS workers in the schools for the deaf account for a majority of those who mentioned group differences. Like administrators, although less frequently, the PPS staff seemed to view the process as similar for both groups. Exceptions to the majority cite the slower rate of maturation due to language development problems. The lack of auditory input, they feel, tends to isolate the deaf in the communication process, diminishing their ability to benefit from informational and experiential exposures, Differences do exist between the staff in the occupational education centers and in the schools for the deaf in this respect. Center personnel workers rarely mention differences between deaf and hearing students in the career maturation process; personnel workers in the schools for the deaf, on the other hand, are more equally divided in their perceptions.

The responses of the 108 instructors follow the same pattern as the pupil personnel service workers. Approximately 61% (66 teachers) viewed the process of career choice as the same for both deaf and hearing students. Approximately one-third (36 respondents) viewed the process of career choice as different for deaf and hearing. The 47 teachers in the schools for the deaf were about equally divided in their views with about one-half (23) indicating the process was the same, while the other half (22) indicated it was different. On the other hand, 43 of 67 BOCES teachers (64%) viewed the process as being the same for hearing and hearing-handicapped students. Since the question, as it was posed to the instructors emphasized the process of "career choice" rather than the process of "career maturation," the possibility that some respondents may have distinguished between "choice" and "maturation" should be considered in interpreting the data.

In instances where instructors mentioned differences between deaf and hearing, they viewed the process as being harder and slower for deaf students. The instructors, unlike administrators and pupil personnel workers, characterized the sources of difficulty more specifically. The teachers who viewed the career choice process as different for deaf students provided the following explanations: (1) deaf students lack exposure to a variety of work roles and tend to follow precedents set by deaf predecessors in the work world; (2) many deaf students live in a protected environment and lack exposure to or understanding of the hearing world; (3) career choices and options open to deaf students are limited by employment practices; (4) deaf students have to cope with prejudice and occupational stereotypes imposed on the hearing handicapped.

Closely related to teacher views of the career choice process for the deaf and hearing students was the question "Do you think the students in your classes are ready to choose a career?". Of the 108 instructors responding, only 14 (11%) felt that the deaf students were ready for career choice; and most of those teachers (11) were instructors in the occupational education centers. This means that only 18% of the occupational education instructors and less than 7% of the deaf education teachers believed that deaf students were ready to choose a career. The 42 instructors (38.8%), who felt that students were not ready to make a career choice cited lack of knowledge and experience, lack of maturity, or deficiencies in personal development as reasons for this belief. This group included 65% of teachers at the schools for the deaf and only a quarter of those at occupational education centers. Forty-four teachers (41%) indicated that readiness for career choice was a strictly individual matter, requiring consideration of a variety of factors in each individual case. Here, too, the discrepancy between teachers of the deaf and occupational education instructors was large. Fifty-five percent of occupational education instructors felt that readiness varied from individual to individual, while only 21% of teachers from schools for the deaf adopted this view. Overall, it must be noted that instructors at schools for the deaf were much less optimistic regarding students career choice readiness than were the occupational education teachers.

Since such a large number of teachers felt that readiness for career choice was an individual consideration, the factors or characteristics which teachers associate with "career readiness" are worthy of note. The following characteristics were noted as helpful in identifying deaf students who might be ready to make career choices: (1) they spend more time on their studies and seem to be more serious, business-like and diligent; (2) they evidence more concern about the future and tend to ask more questions about jobs; (3) they seem to have more information about their interests and about jobs; (4) they are more independent in their work and social behavior; (5) they seem to have better social skills; (6) they seem to be more "oral" and have better language facility; (7) they have better attitudes toward school work.

In contrast, the characteristics teachers associated with career choice immaturity included: (1) they don't know how to act (socially immature): (2) they are less "oral"; (3) they lack self confidence: (4) they have a negative or low positive self concept; (5) they seem to "panic" easily: (6) they lack work experience; (7) they have not given very much thought to careers: (8) they don't know much about the world of work and don't know what they want to do; (9) they have little, if any, information about the physical and mental demands of jobs; (10) they tend to be "followers" with very poor decision making skills; and (11) they have more difficulty with self-discipline and don't know how to use their time constructively.

Parents were also asked if they felt the process of career choice was different for deaf and hearing students. Of the 28 parents interviewed, 16 (or approximately 57%) felt that the process was different. In identifying how the process of career choice differed for the deaf, parent responses followed a pattern similar to the other groups. In general, parents cited limited job opportunities. Regarding job market limitations parents shared with teachers and others the view that career choices are limited by stereotypic beliefs about the work capabilities of the deaf. In addition to restricted work opportunities, parents cited maturational impediments and limited experience with the hearing world as factors which retard significantly readiness for career choice. This trend was even more marked in the parent responses obtained in the second year of the study. An even larger proportion of parents in this group (76%) indicated that the process of career choice was unique for the deaf. An additional 20% felt there was no difference, and 4% said they did not know. As in the first year sample, many (36%) felt that their child's deafness would limit job opportunities. Other frequently cited differences in the career choice process for the deaf included their need for learning how to live in a hearing world, their lack of prior job experiences, restricted communication skills, and lack of independent work skills.

Of the 28 parents in the first year sample 11 (36%) felt that their children were ready to choose a career, while 14 (50%) felt that their children were not ready. Most often, parents commented that young people needed more knowledge, training, experience, maturity, or some combination of these factors, before they could properly engage in career decision making. In general, parents were hesitant to endorse career choices during the high school years. The following year parents were even more pessimistic about career choice readiness. Less than a quarter of those interviewed responded affirmatively and almost two-thirds felt that their children were unprepared to make a choice. Another 12% responded with uncertainty.

A majority of the 77 students interviewed (53%) reported themselves ready for a career decision. Only 20 students (approximately 25%) indicated they were undecided or were having difficulty in making a career decision. Like their parents, students were less optimistic in the second year. Only 42% felt ready to choose a career and 57% were unready or hesitant. The difference between student views and the perceptions of school personnel regarding decision-making readiness was the most striking discrepancy observed in relation to career choice. However, wide variation between groups (educators, parents and students) did exist.

In identifying pressures which they felt in making career choices, the majority of students interviewed in both years indicated they did not feel any pressure from parents or teachers to choose a career. Most of the pressure for choice, students indicated, was self-induced, and the most potent motivator influencing their urge to seek employment was their desire for money. Remunerative employment represented the security which was uppermost in their minds.

Factors in the Career Choice Process

A number of factors have been identified in the literature as being important in the career decision-making process. Some of these factors are personal to the individual and can be considered "self" factors. Such personal features as interests, abilities, values, body concepts, needs, motivations, and aspirations are deemed to be "self" factors important in career choice. Another group of factors are "environmental," originating not in the individual himself but in the society or world of the individual. Labor market demands, job opportunities, working conditions, job qualifications, job preparation, job earnings and benefits and the interpersonal dimensions of work are examples ofconsiderations which individuals should take into account in the career choice process.

Administrators and pupil personnel service workers were asked an open-ended question "What factors are most important in influencing a career decision?". Administrators were not provided with suggestions concerning specific groups of factors which could be considered. Their responses were coded according to the factors they were able to identify spontaneously.

1. Self concept. Of the 46 administrators, 11 (23) identified the self concept as an important consideration in career choice. School administrators in the occupational education centers (8) accounted for the bulk of the responses

in this category. It is interesting to note that only three of the administrators in the schools for the deaf referred to the self concept as an important element in the career choice process. The self concept was mentioned by only 9 PPS workers.

2. Occupational information. Seventeen (35%) administrators considered occupational information an important factor. Again, 10 of these 17 responses were cited by administrators in the occupational education centers. Occupational information was cited by 14 (29%) pupil personnel service workers.

3. Parental advice or pressure. Parental advice or pressure was cited by 33 (70%) of the administrators. In elaborating on this response many administrators indicated that parental attitudes and aspirations were a most influential factor. Others talked about the life style of the family, the climate of the home and the attitudes of parents and siblings toward the world of work. The environment of the home and the values of the home were considered important in developing attitudes that are helpful to the career choice process. Of the 47 pupil personnel service workers interviewed, parental advice or pressure was cited by 29 (64%) as a career choice consideration. PPS workers also mentioned frequently other adults (e.g., teachers and relatives) as sources of information and/or as role models.

4. Individual interests and abilities. These factors are viewed by 29 administrators (60%) as matters of importance. Individual interests and abilities were considered significant factors by 29 (64%) of the pupil personnel service workers.

5. Economic conditions. Ten (21%) of the 47 administrators cited economic trends as a significant determinant of choice while 9 (19%) of the PPS workers also mentioned it.

6. Physiological characteristics. Physiological characteristics were mentioned by only 6 (13%) of the 47 administrators. The lack of concern for the impact of physiological factors on employment is particularly

interesting, in view of the fact that many of these administrators are administering programs not only for children who are hearing impaired but for children with a wide variety of physical or mental handicaps. An equally small number of PPS workers (3) mentioned this area.

Inquiries to identify the factors in career choice which teachers felt should be considered were posed in a slightly different way--"What do you believe people should think about when they plan a career?". In general, a combination of three factors were cited most frequently: (1) abilities and interests of the student, (2) prospective income, and (3) job related conditions. In fact, a majority of the teachers agreed that these were influential factors to be considered as students plan for their future work.

In general, teachers believed students did not consider as many factors as they should in planning their careers. When asked what students actually think about as they plan their careers, teachers mentioned income ("pay") as the preoccupation of most students. At the same time teachers believe that students pay too little attention to their interests. Such obstacles to employment as communication difficulties, fear of entering the hearing world, safety problems or work hazards, or employer prejudices were seldom identified as factors to be considered. Interests, abilities, and prospective income were most commonly identified as important considerations.

When parents in the first year sample were asked "What do you believe people should think about when they plan a career?", the student's interests was the almost unanimous response. Abilities were mentioned about 50% of the time. Other factors like income, job benefits, and the training and experience necessary to secure employment were mentioned infrequently. In the second year 80% stressed interests and 32% mentioned ability. Clearly, the parents felt that a student's interests and abilities were the most significant considerations in the planning process. Parents repeatedly stressed the importance of people doing what they liked and finding happiness and satisfaction in their job.

Students were asked to think about going to work in the future and to describe what should be considered in the planning process. Of the 77 students who were interviewed in the first year sample, 24 (32%) could not respond to the question. There were no differences in the number of students who were unable to respond in three of the sites. Of the 53 students who did respond, 10 selected interests (what they liked to do), and 9 mentioned a combination of interests, prospective income and job benfits. However, when the career planning question was personalized in the form of 'What do you think is important when you think about working?" 16 students were either unable to respond or "didn't know." Two factors dominated the responses of the remaining 61 students. Personal interests, prospective income, and job benefits (or a combination of these) were cited by 47 (61%) of the students. In the second year interviews 81% of the students responded in this manner. What students consider important in career planning closely parallels parental thinking in this respect. The importance of security and job income dominates the responses of both groups. It is also clear that students have a very limited view of factors relevant to the career planning process. They were unable to provide any range or depth of thinking in identifying the personal (self) or environmental (societal) factors important to the processes of career maturation and career choice. The very limited information which they have about the career planning process is indicative of a definite void in the career education of deaf students. Their lack of understanding of the factors that could or should be considered in career planning suggests that present efforts to foster or facilitate career maturation in deaf students are inadequate or ineffective.

Influences on the Career Choice Process

Teachers, administrators, and pupil personnel service workers overwhelmingly considered parents as the primary influence in the career planning process. The influence of peers, teachers, and counselors was also cited, but was clearly viewed as secondary in importance to the effect of family. Career guidance activies like vocational testing, occupational information, guidance counseling or the use of visual materials to present job information were mentioned with conspicuous infrequency. Personal influence was apparently considered much more influential than the educational functions that guidance programs are designed to serve.

Teachers also reported that students mentioned parents or other relatives as most influential in their career choices. They further observed that students acknowledged reliance on peer influence more frequently than on teacher or counselor influence. By and large the evidence suggests strongly that the educators interviewed perceived their impact on the process of career choice to be negligible.

In identifying sources of influence over career planning, parents appear less confident about their own impact. In first year interviews only one parent in three cited parental influence as important in career planning and choice, and most of these were associated with a single school for the deaf. In addition, only 3 parents cited teachers and 5 cited administrators and/or counselors as most influential in career planning. Eight (8) of the 28 parents interviewed were unable to identify people who, in their estimation, influenced the process.

In attempting to assess their child's concerns about career decision making, most parents expressed the opinion that their children were not currently engaged in active career planning. It was quite clear from their responses that, if planning was in processs, they were unaware of its direction or of influences affecting it. The occasional parent who did admit to an awareness of the child's career-related concerns was most conscious of the state of anxiety and frustration associated with career planning efforts.

The second year's parent interviews suggested a rather different picture of parental awareness of career-planning by their children. Half of the parents interviewed were aware of the direction of their child's career interests to some extent at least. Only 20% of the parents believed that no career-planning or progress had occurred. Sixteen percent of the parents expressed complete ignorance of career-planning activity on their child's part, and an equal number made no response at all. The apparent discrepancy between first and second year data cannot be readily explained, but there is some reason, based on interviewer observations, to believe that the intent of the questions may have been perceived differently by first and second year respondents.

Making career choices. School administrators and PPS workers both believe the experiences of individuals are important in career choice. Of the 47 school administrators, 44 rated the experiences of the individual students "very important" as did 42 of the 47 PPS workers. In opinions elicited about the actual significance of a career choice, the developmental nature of career as a continuously evolving process was a dominant theme in the responses of school administrators. A majority of school administrators believed that choice begins in the adolescent years around the ninth or tenth grade (15-16 years of age) and continues into the young adult years. Some administrators would not target any concluding age level or life stage by which they felt career choice should have been made, and most administrators stressed the potential for career change throughout the life span.

Occupational education administrators tended to view the selection of an occupational education sequence as a high school sophomore or junior more as an opportunity for reality-oriented career exploration than as an instance of goal-setting. Some indicated it would satisfy an immediate need to set temporary goals, but not in a manner that would limit eventual career choice.

In general, pupil personnel service workers also believed that the choice process begins in the early high school years and continues into the early adult years. They also recognized the likelihood of continuous career change over time. Compared to administrators, however, they were less process-oriented and more decision-oriented. They were less sympathetic, therefore, to a dynamic view of career change as a life-span process.

Seventy-eight and 84 percent of parent responses in the first and second year interview suggested age levels appropriate for career choice. Although there was considerable variation in responses of both groups, most parents indicated the need for career choice to occur during the middle to late adolescent years (80-85%). Only 12-15% suggested deferring choice as long as necessary for maturational or developmental reasons. The remainder of the responses obtained from parents were about equally divided between early adolescence or early adulthood as preferred choice points. In contrast to the views and beliefs of administrators and pupil personnel service workers, parents did not view career choice as a developmental process. They tend to see it as a specific, definitive event, appropriate to adolescence. It is worthy of note that these beliefs conflict with their estimates regarding the actual "readiness" of their children to make a definitive career decision.

In the first year of the study, of the 77 students interviewed, 44 (57%) believed that career choice should be made between the ages of 16 and 20. Five students (7%) thought the choice should occur before age 16; 11 students (14%) believed the choice should be made between 21-25; and 2 indicated that career choice should be made after 25 years of age. Seven students thought it was an individual matter depending on development and maturity. Seven said they "didn't know" when career choices should be made. Second-year data were much less variable. Almost 70% of the students interviewed the second year placed the age of career choice at 16-20. Twice as many (13%) placed the age below 16 as had done so the previous year; and only half as many (7%) put the age of choice at 21-25. Most students share with their parents the belief that "a" definitive career choice is made and that such a choice is best accomplished at some point between middle adolescence and the early adult years.

CAREER EDUCATION GOALS AND ACTIVITIES

In order to determine how the eight institutions cooperating in the study provided for the career learning-maturational process, a portion of the interview was directed at identifying perceptions about the goals of career education and efforts to implement the goals. Administrator, pupil personnel service workers and teacher perceptions were explored. Two major goal categories were identified: (1) facilitating maturation through improvement of self knowledge was emphasized at four schools and (2) seven schools emphasized learning about employment through increased exposure to occupational and/or actual job experience.

The Goals of Career Education

The 47 administrators overwhelmingly believed in learning goals that were designed to foster knowledge about the world of work. Almost 75% attributed to career education goals involving either acquisition of information or direct learning experiences. The types of learning goals administrators favor include the following: (1) to provide students with knowledge of job areas, (2) to develop the awareness of technical requirements for specific jobs, (3) to promote awareness of the increasing opportunities offered by a continuously expanding career domain, (4) to expose students to as many career areas as possible through "hands-on" experiences, and (5) to provide students with information regarding specific jobs and job opportunities.

A majority of the administrators (57%) reported favoring maturational goals contributing to self knowledge or personal development. An emphasis on facilitating self appraisal of interests and abilities was particularly notable. Responses related to growth in self knowledge included (1) cultivating realistic self appraisal of skills and abilities, (2) helping students identify their own perferences, and (3) enabling students to clarify what they like about themselves and their surroundings.

Pupil personnel service workers also overwhelmingly identified the career education value of both knowledge about jobs and job experience. Of the 47 PPS workers, 39 (83%) mentioned these goals. Maturational aims were emphasized by 19 (47%) PPS workers, of whom 8 were affiliated with a single school. Increased self knowledge, however, was cited far less frequently by pupil personnel service workers than administrators.

Of the 108 teachers, 76 (70%) cited knowledge of jobs as an important goal of career education. Teachers both in schools for the deaf and in the occupation education centers cited this particular goal with equal frequency. With reference to self knowledge, only 30 teachers (28%) cited maturational goals relating to self and/or self development. Though it is possible that teachers are ill-informed about the role of "self" in theoretical discussion of the career maturation process, teachers have elsewhere attached major importance to self-appraisal of strengths, weaknesses, interests, and abilities.

Grade Level Consideration in Developing Career Education Programs

The majority of school administrators (41 or 87%) felt that a career education program should start in preschool or the primary grades. The remaining six were divided in their preferences among grades 4-6, junior high school, and grades 9-12.

A majority of pupil personnel service workers (70%) also recommended starting career education programs in preschool or primary grades. Five favored initiating programs in grades 4-6, 3 in junior high school, and 6 in high school.

Of 108 teachers, 54 (50%) indicated that a career education program should start in grades 1-3. In addition, 9 teachers believed that career education programs should start in grades 4-6; 19 indicated that career education programs should start in grades 7-8; and 21 placed the origin of career education in grades 9-12. Only 5 teachers failed to propose a grade level at which a career education program should begin.

Administrators favored a K-12 career education program, assuming that programs begun at the primary level would be maintained through the high school years. PPS workers and teachers also tended to favor early intervention, but were less enthusiastic than administrators, nonetheless, about preschool and primary career education programs.

Career Education Activities

A wide variety of activities designed to promote the aims of career education were mentioned by administrators. Plant visitations, field trips, outside speakers, interest inventories, performance tests, career days, parental discussion groups, hands-on exposures to tools, films, and role playing experiences were proposed most frequently. Most notably absent were recommendations to involve parents actively in the career education process. The lack of concern for parent involvement is inconsistent with the emphatic philosophical views of administrators regarding the necessity to involve parents in virtually all phases of the education process. Administrators' references to field trips and other extramural activities as a popular career education function is probably more idealistic than realistic. Evidence suggests that such events are, in fact, rare.

PPS workers at all the schools are in agreement regarding the types of activities that should be included in a career education program. Foremost among the PPS workers' preferences were field trips and plant visitations. PPS workers also cited the need to promote group discussions that involved and encouraged parent participation in the career education effort.

Teacher views on career activities varied widely from school to school. Considerable emphasis was placed on the guidance services and on the exploratory aspects of occupational education. Many teachers admitted that career education suffered from neglect prior to entry into high school; and the activities that were identified by teachers would support the contention that at present career education is essentially a high school activity. They made reference to the use of a great many materials (books, films, movies, games), but at only one school did it appear that a systematically developed career education model (CREED) is actually in use. Counseling and tests were mentioned frequently by teachers, indicating their belief that some use of standardized tests occurs in conjunction with vocational counseling. Teachers in all schools offered a wide variety of suggestions for the development of career education programs. It would appear that instructional staffs in these schools would support a more systematic and comprehensive career education effort.

Teacher assessment of the adequacy of the career guidance program exhibited considerable variability--not only from school to school, but within schools as well. Overall, 39 teachers referred to the career education program in their schools as "moderately adequate," 23 viewed the program as "very adequate," and 3 viewed their program as "completely adequate." Fourteen teachers considered the program in their school as "barely adequate" and 15 rated their program "inadequate."

SUMMARY

The present findings indicate that school administrators have assimilated beliefs which favor a developmental approach to career maturation. While their beliefs are extremely general and lack integration, in principle they espoused the "process" aspects of career learning-maturation to avoid subscribing to models to which definitive career choice concepts are central. Most administrators recognize the evolutionary nature of one's involvement in the work place and the developmental nature of events that shape careers. On the other hand, the matching of "talents and tasks" in the more traditional parsonian sense still permeates their thinking about decision-making tasks and the identification of desirable career education activities. They gave the impression of incorporating new ideas and beliefs about career maturation while older and more conventional views continue to influence their suggestions for operationalizing career education.

The career maturation process for deaf students is perceived in much the same manner as the process for the nonhandicapped. School personnel (administrators, pupil personnel service workers and some instructors) believe that career maturation is slower and more difficult for the deaf. Difficulty in the rate and difficulty with which motivation occurs are attributed largely to informational deficiences. Deaf students are generally believed to lack information about the world of work, but little attention has been directed at empirical verification of this assumption. No programmatic adaptations to accommodate individual differences in maturational needs (or deficiencies)of deaf students were identified. School personnel apparently have given little attention to identifying and fulfilling special career maturational needs for deaf students.

Career guidance is largely non-existent--at least in any formal sense. While mention is made frequently of standardized testing and career counseling, there is little evidence to support the existence of any programmatic approach. Students and their parents do not make reference to any counseling activities. If standardized interest or ability tests are administered, the results of these tests are not as a rule discussed with the students. Test results were rarely incorporated as evidence for decision-making in meetings or conferences where program admissions or course placement decisions were being considered. Mention of guidance or of guidance personnel was most infrequent. Counseling, where it occurs at all, appears to have had little impact on career maturation.

Career education activities focus primarily on providing job information and arranging job experiences. Such exposures constitute the only explicit purpose attributed to these activities. Relative to developments in the field of career education in recent years this suggests an exceptionally narrow focus and a very limited program. Furthermore, the career education activities provided do not appear to accommodate the specific informational needs of deaf students (e.g., the level of receptive and expressive communication skills needed for successful performance in a given job, hazardous occupations, the potential or necessity for "job tailoring" in various occupations). Activities that extend deaf student knowledge and understanding of jobs and the job market are limited. Other exposures that would help deaf students find and locate jobs, cope with the prejudicial attitudes of employers, or deal more effectively with societal stereotypes about deafness and employment of the deaf were rarely mentioned.

Parents, while perceived as most influential in career planning by school personnel, do not recognize the significant role attributed to them. Students and teachers report considerable parent influence on career choice. Few, if any, references to their actual involvement in career decision making were noted, however. Very few school career education activities were identified where parental input was utilized. Parents seem reluctant to seek help from the school and usually become involved only in response to infrequent invitations by the school. Career planning is an unfamiliar topic to parents. Although a number reflected considerable uncertainty and anxiety about career selection, they were more overtly concerned that their children "get a job," "have an income," "be happy" than with the actualization of career potential or with a sense of self-fulfillment.

Even though most students indicated they were ready for career choice, they were quite unaware of the many factors normally considered in career decision-making. They were attuned to the expectation that "a" choice should be made in the near future. Students evidenced little understanding of their own employment related strengths and weaknesses and referred vaguely to interests and abilities most frequently as the factors to be considered in career planning. Yet, very few specific activities were identified that constituted opportunities for deaf students to engage in self-assessment. Income and security were career goals that students and parents emphasized. In addition, parents evidenced a great concern for the welfare and happiness of their children. Students seemed to feel that a job would provide financial security, but there appeared to be considerable anxiety experienced by many deaf youths over their potential for economic independence and self support.

Little attention, both philosophically and practically, was directed toward maturational goals dependent on an evolving understanding of "self." The self concept is largely ignored as a component in career education activities. Teachers expressed some concern over the adequacy of the career education effort and seemed fairly well attuned to the needs of young people. They recognized that students were almost exclusively interested in the monetary rewards of work and expressed regret that the many other vital considerations in career evolution were both unrecognized and unattended. Teachers had ideas for working on these problems. They also seemed motivated to help; yet they exhibited a reluctance (or a lack of confidence) to initiate new activities. They seemed to be waiting for leadership.

Much work in career learning-maturation has yet to be accomplished. While school personnel seem ready to initiate new programs, there is little evidence that from information available about current practices and future plans that new programs and activities will be initiated. Attitudes that are conducive to change and development have been expressed, but they are unlikely to materialize into active program development without the provision of incentive and encouragement.

SECTION V

INFORMATIONAL AND DECISION-MAKING FUNCTIONS

Providing the deaf students and their parents with information about the occupational education opportunities in cooperating occupational education centers, helping the students and their parents to consider the available educational options and to make appropriate educational decisions, and orienting the students to the new and different environment of the occupational education center represent three different aspects of this mainstreaming effort. For purposes of delineating the procedures used in the four research sites, the process employed by the schools was studied with reference to three distinct periods: (1) the pre-selection period representing that block of time when the students in the schools for the deaf were provided with information about the occupational education program and the options available; (2) the selection period consisting of activities directed at helping students and their parents consider and formulate decisions regarding participation in occupational education mainstreaming, and (3) the orientation period when students were assisted in becoming familiar with and adjusting to the occupational center's program, plant and personnel. Emphasis was placed on the identification of functions and procedures designed to provide information which would facilitate the decision-making process for students and their parents and on the specific decision-making procedures associated with the compilation and evaluation of student information, student counseling, parent conferencing and staff consultation. Factors in the decision-making process, the means whereby alternatives were identified and evaluated and the processes resulting in the selection of an occupational course of study were examined. Particular attention was directed at the nature of participation in decision-making by school personnel, parents and students. This involved a careful attempt to clarify the roles of each group, their influence over and their contribution to the decision-making process.

Interviews and student case studies were the primary methods of investigation. Interviews were utilized to identify the practices employed to inform individual students and groups of students in the schools for the deaf about the educational opportunities, requirements, and program practices in the occupational education centers. During the first year of the study 120 school personnel including administrators (45), pupil personnel workers (50), and classroom teachers (25) in all eight institutions at the four research sites were interviewed. All administrative-supervisory and pupil personnel were contacted, while classroom teachers in the schools for the deaf and in the occupational education centers (teachers having deaf students in their classes) were randomly selected for interview. These data were used to identify the specific procedures employed to provide information for students and their parents and to compile and evaluate information about students in decision-making activities.

During the second and third year of the study, eight case studies were conducted with a sample of students from the total target population. Two students from each of the four research sites (6 males, 2 females) were designated as case study subjects. The selection of students for this purpose was systematic, rather than random, and was designed to insure that the case study subjects would represent in as many ways as possible the breadth of variation observed in the target population on such relevant variables as family background, educational experiences, ability, communication skills and sex. The case study technique was employed to provide for the detailed specification of the actual factors considered in the determination of participation in the "mainstreaming" program and in the selection of a course of study. Further, the case study method provided opportunity to pursue in depth and in detail information regarding the roles of participants, the influences they exerted, and the nature and extent of each participant's involvement. In obtaining the case study data, basic information was obtained from the student's cumulative school record, standardized test data collected during the study, and from interviews with school personnel (classroom teachers, pupil personnel service workers, other support personnel, administrative-supervisory staff) and with parents, seeking general and specific information about the student.

The case study data were examined to identify the factors used by all participants in the determination and placement of individuals in the program. Six selection criteria emerged as primary information categories: (1) the academic record (e.g., grades, subjects pursued, attendance, teacher recommendations, observed classroom performance and behavior); (2) personal characteristics (e.g., student interest and motivation, work attitudes); (3) communication skills (expressive and receptive facility); (4) psychometric profile (standardized aptitude and achievement test scores, interest inventory profile); (5) performance in pre-vocational subjects or courses; and (6) parental views or preferences. The student's academic record, interest and motivation and achievement test scores were the most commonly used and influential sources of information. Aptitude test results, scholastic ability and interest profiles were only infrequently incorporated to a significant degree in the selection decision.

THE PRE-SELECTION PERIOD

Four types of information were identified as basic to the mainstreaming decision. First, providing the deaf students in the home school with information about the types and content of courses offered at the occupational education centers was deemed most important (89%). Far less frequently cited, but next in frequency, was information about the environmental features of the centers, including the physical setting, types of facilities, and the work or classroom conditions (cited by 27%). Personnel at the occupational education centers (32%) considered this far more important than did personnel at the schools for the deaf (15%). Next in importance (23%) was information about future job opportunities resulting from training in the center. Here again, personnel in the centers (28%) cited an awareness of future job potential more frequently than personnel in schools for the deaf (18%). Knowledge of one's interests and abilities, cited by 16%, was a fourth area of importance. Several other types of information (instructional methods employed in the occupational courses of study, availability of support services, transportation arrangements) were mentioned by a comparatively small number of people (in most instances less than 5%) among the four sites.

Parent needs for information about the centers were regarded as essentially the same as for prospective students. The combined groups of school personnel (81%) cited the need for information about the types and content of courses offered at the centers most frequently. Awareness of future job opportunities was mentioned by 30%, information about the environment at the centers by 22%, and knowledge of their child's interests and abilities by 21%. It is interesting to note that parental awareness of a child's interests and abilities was more frequently mentioned as an informational need of parents than of students.

Overwhelmingly, then, one area of the types and content of courses offered at the centers was deemed the most important area of information for both students and their parents. The significance of this area was noted also in the descriptions obtained regarding the informational techniques employed. The other three areas of information, cited by less than a third of the population interviewed, were identified more often by occupational education personnel than by deaf educators. Their familiarity with the courses of study, student performance, and the eventual job placement prospects of graduates suggest that these areas should be given more consideration in the pre-selection process.

Three techniques for providing information about the occupational educational centers to prospective students were identified: center tours (50%), in-class presentations (32%), and brochures or bulletins (31%). A significant number of interviewees (26%) did not know what techniques were used to disseminate information to students. Among the less frequently mentioned responses were career awareness courses at the school for the deaf, peer contacts with students who were already attending the center, and class discussions about the center. The responses among the different groups of interviewees were quite similar. There were no major differences in the techniques employed at the four research sites since each one utilized all three primary techniques cited although each site had developed its own variation in its use of the individual techniques.

School personnel were less informed about the techniques for providing parents with information. The majority of interviewees indicated they had little knowledge about the procedures used to communicate this information to parents. Administrators-supervisors seemed to be the most familiar with the methods for disseminating information to parents while classroom teachers were the least informed. Approximately 80% of the classroom teachers and over half of the pupil personnel workers in both institutions at all four sites had no knowledge of how parents were informed about the programs.

Personnel who were aware of techniques used to inform parents cited these three techniques most frequently: meetings and conferences with parents (31%), visits or tours of the BOCES Center (26%), and the dissemination of brochures and bulletins (19%).

Of the four major areas identified with the informational function, the need to become familiar with the types and content of courses offered at the centers, was consistently mentioned. That the sites were essentially geared to serve this need was corroborated in the case studies. Students had received some information by center tour, bulletin, or class presentation. However, the case study data indicated that students, particularly the residential students, may have obtained far more information through informal discussions with peers who were already enrolled in the program. The tours, brochures and group presentations (including slide presentations) provided additional information and were often the incentive for students to seek counsel and to discuss the possibility with their parents. Parents, on the other hand, were usually ill-prepared to assist their sons/daughters since they had very little knowledge of the program. They were often unable or reluctant to seek counsel without further information. Yet, there were few instances where the parents initiated any information-seeking action. The case of L. B. is typical.

> During his sophomore year, L. B. attended a general information program on opportunities for training in an occupational education program. A slide presentation describing the center facility and its course offerings was given. Some weeks later, L. B. was part of a group of students who toured the center. At a general group meeting the day following the tour, the students were given an opportunity to discuss their reactions to the tour experience. Forms were distributed to the students on which they could indicate their interest in attending the center and in course(s) of study there. L. B. indicated an interest in the autobody course. Arrangements were made for L. B. to visit an autobody class and to participate in "hands-on" activities. This was followed by a meeting with the school-level supervisor to discuss his interests and his potential for success in a hearing environment. L. B.'s parents were not involved in any of these pre-informational sessions or conferences. It was not until later, at the time when programs of study were being arranged for the following year, that the parents became involved.

Parents were uninformed generally about the center programs (in all sites). In most instances they did not become involved in the determination of whether their child would participate in the cooperative program until the selection period.

In one research site, a full year exploratory program, known as the multi-occupational course, under mainstreaming conditions, was provided. In this program, students elected to participate in exploratory 6-week experiences in six different occupational education experiences. This program was made available to all sophomore students and seemingly served both the information and experiential needs of the students. These actual experiences in a variety of mainstreamed occupational training situations with different students and teachers appeared to have more effect on decision making than did the informational activities employed at the other sites.

THE SELECTION PERIOD

The process of making the decision to participate in the occupational education program and to elect a course of study was a very difficult area to examine. The identification of the factors considered in individualized educational planning (i.e., developing long and short term goals) and in considering the wider range of educational and vocational opportunities afforded by participation in the cooperative program were facilitated by the case study method. With P. L. 94-142 encouraging more student and parent involvement in the determination of educational goals, details describing the factors and influences involved in decision-making and the procedures used are especially timely. How the decision to enroll in the cooperative occupational education program and how the choice of a vocational course of study was effected were primary targets for examining the procedures used in the decision-making process.

During the first year, interview data regarding the procedures employed to facilitate program decisions indicated that 41% of the school personnel were unfamiliar with the methods used to help deaf students make a determination about participation in the cooperative program. Likewise, approximately one-half (47%) were unfamiliar with the procedures for helping students choose an occupational course of study. Of the different groups of interviewees, the administrative-supervisory group were best informed. Classroom teachers were least informed with 68% indicating they had no knowledge of program decision-making or course-choosing procedures.

Decisions about participation in the program and the choice of a course of study were generally accomplished by a committee evaluation of student records. At three of the sites, a committee approach to the evaluation of student information was utilized. (The general organization and function of the three committees is reported in the section describing the four research sites.) In each case, the committees were composed of personnel associated with the schools for the deaf.

During the first year, inquiries were included in school personnel interviews regarding the involvement of parents in cooperative program enrollment and course selection decisions. The results indicated that over one-half (58%) of the school personnel were unfamiliar with procedures for involving parents in program decision-making. The respondents who demonstrated some awareness of the procedures for parent involvement cited the use of parent conferences, telephone calls, open house programs or visits to the center, and the use of public media. Administrative-supervisory personnel were again the group of school people most familiar with the procedures and techniques for parent participation in the program decision-making.

The interview was designed to identify school personnel who are routinely involved in the choice process. The responses of those interviewed indicated that as many as 21 different staff members were potential participants in decision-making efforts. The job classifications mentioned with the greatest frequency were guidance counselors (55%); vocational education personnel (44%); the coordinator for the cooperative program (41%); home school teachers (39%); academic supervisors (34%); and the principal or assistant principal (32%). Personnel mentioned with lesser frequency included the director of pupil personnel services, the school psychologist, and the established committee for program planning. Pupil personnel workers tended to emphasize the role of the vocational education supervisor in the schools for the deaf. The program coordinator was mentioned by all three groups of interviewees. The participation of the home-school teacher was cited more often by the administrative-supervisory group.

The eight case studies documenting the procedures followed in arriving at decisions about program participation and course-selection provided specific information concerning the factors considered, the influences exerted, and the roles enacted by the participants. All four sites tended to use the same basic procedure: (1) the collection and compilation of information about the student, (2) the evaluation of student information, and (3) the involvement and/or notification of parents. Each of these steps will be described and illustrated, where appropriate, with reference to the case studies. The procedures employed in all four sites were similar in many respects. However, the upper level "mid-day" and advanced level (sophomore) multi-occupational education experiences provided the Mill Neck students, parents and school personnel with a background of experiential evidence for program decision-making. In addition, the decision to participate in the multi-occupational program during the sophomore year often resulted in initiating the decision-making process earlier and extending it over a longer period of time. The case of T. L. illustrates this essential difference from programs which do not offer systematic exploratory opportunities.

> When T. L. was a freshman, he heard about occupational education from older students who were enrolled in the program. As part of a career education unit that year he also had an opportunity to visit the occupational education center and visit different classes. He expressed an interest in the occupational education program and a meeting with his parents was held. They had several reservations about the program but after touring the Center, they agreed that T. L. could enroll in the multi-occupational program. T. L. entered the program at the beginning of his sophomore year, spending approximately six weeks in each of the following training areas: masonry, carpentry, sheet metal, autobody, machine shop and marine maintenance. He received passing grades in all the experiences but he liked autobody best and felt he did his best work in it. He wanted to participate in the cooperative program as a junior taking the autobody course. In further conferences with his parents, they expressed a preference for his enrollment in the machine shop course. In a meeting with T. L., his parents, the program coordinator, and the high school supervisor, T. L. agreed to take the machine shop course.

Even though T. L. was not permitted to enroll in autobody, his first choice course, having had some experience with the machine shop course helped him in understanding some of the reasons he was being encouraged to consider the machine shop program.

The Compilation/Evaluation of Student Information

In preparing for the determination about participation in the occupational education program, considerable information was collected concerning the student's academic progress and basic skills in reading and mathematics, skills in communication, interests, abilities, educational and career aspirations, parental preferences and classroom teacher reports and recommendations. This information was generally collected by the school counselor, high school principal, or vocational education supervisor. In making application for the program, students indicated the course(s) of study they were interested in taking. In general, standardized test information from occupational interest inventories and aptitude measures were not utilized although one location did employ the Geist Picture Interest Inventory (a non-verbal measure of occupational preferences).

Academic progress and basic skill development. Academic progress and potential was in most cases a major factor and one that weighed heavily in the program participation decision. School personnel used standardized achievement test scores and school trades as indicators of college potential. Many parents were concerned about their child's academic achievements, particularly in basic skill areas, and, in many cases, only agreed to the individual's participation in the program when assured that the individual would continue to have basic skill instruction. The case of L. B. illustrates this type of parent reaction.

> L. B. was considered a candidate for occupational education because his academic standing was sufficiently low to preclude college while his expressed interest in autobody, social maturation and communication skills were sufficiently high to encourage program participation. When L. B.'s parents were informed of his interest in the autobody course at the occupational education center, his mother was most concerned about his academic education, particularly reading and math. In conferring with school officials, she insisted on having L. B. participate in academic subjects. When assured that work in these areas would be provided, L. B.'s mother agreed to his participation in the cooperative program and in the autobody course.

Parents of students in the target population were very concerned about their child's academic attainment in the skill areas of English, reading and math. They were not particularly intent on preparation for higher education, but they recognized, and placed priority on, the importance of basic academic proficiency for job procurement and job security. Both parents and school personnel, therefore, attributed a high priority to academic achievement but for somewhat different purposes. To what extent school personnel persuaded the academically talented from enrolling in the occupational education program was not clearly determined. On the other hand, limited academic talent was often cited as the principal consideration prompting the recommendation for enrollment in the cooperative program. In one school for the deaf, a strong preference on the part of teachers and supervisors of academic programs favored postponement of occupational education to post-secondary years whenever possible.

Parental preferences and concerns. Further expressions of parental concern about job placement and performance and the impact of these concerns on course selection are reflected in the case of L. T.

> When L. T.'s mother discovered that L. T. was planning to take a commercial art course at the center, she called the vocational education supervisor indicating her reasons for opposing the selection of the commercial art course. She didn't think that L. T. would be able to get or hold a job in the art area. She felt that data processing courses would have greater job market potential and, with support from the school's supervisor of vocational education, they encouraged L. T. to reconsider her choice. L. T. agreed to take the data processing course.

Parents were very influential in the program participation and course selection decisions, particularly when their preferences corresponded with those of school personnel. As in L. T.'s case, parents, with the help of school officials, were influential in programming students into courses which they believed would provide maximum job opportunity. In L. B.'s case, his initial preference for the autobody course was discouraged because his deafness was viewed as a deterrent to satisfactory customer relations. He was, therefore, persuaded to enroll in the machine shop course where his parents, with the concurrence of school personnel, felt job opportunities would be greater.

Social ability and social skill development were primary concerns of parents and school personnel, though often for different reasons. School personnel were concerned about social development from the viewpoint of its infleunce on the student's ability to learn and achieve. Their concerns revolved more around the student's communicative skills, and the student's ability to profit from the instruction and to participate effectively in the work situations of the classroom. Many parents, on the other hand, felt their child needed opportunities to experience the work environment of a hearing world. These parents, in particular, would enthusiastically endorse the participation of their child in the cooperative program.

A few parents were skeptical of the program because they feared their youngster couldn't make it in a hearing environment. K. D.'s mother illustrates how these parents reacted and how school personnel worked with them to alleviate any fears of uncertainties they may have had.

> When K. D.'s mother discovered that K. D. was attending the Center (in September), she was extremely upset because she didn't think K. D. could function successfully in a hearing environment. (She was also indignant because she hadn't been notified of the placement indicating that there were occasions when the parents were either not notified of the placement or were informed belatedly.) She called the high school supervisor who then explained the nature of the cooperative program and how it worked. He invited her to meet with him and they reviewed K. D.'s record and the information the committeed had used in recommending her placement in the food service course at the Center. K. D.'s mother agreed to K. D.'s continuation in the program. Since K. D.'s progress thus far indicated she could successfully cope with the learning environment of the Center, K. D.'s mother reluctantly approved her continuance.

Gradually, K. D.'s mother became more approving as she recognized the ability of her daughter to function in the cooperative program environment. In most instances, the mother was more actively involved in decision-making than the father. In a few cases, both parents participated but rarely did the father represent parental concerns alone.

Interests and abilities. Student interests and abilities are factors that both school personnel and parents consider important, though parents tend to weigh these less heavily. R. N.'s case is typical of the manner in which interests and abilities are considered in course of study selection.

> R. N. had been very successful in several vocational "hands-on" experiences in woodshop and in graphics at his home school. He seemed to enjoy these classes and did much better in them than in his academic courses. R. N. liked to use his hands and evidenced an interest in working with things. School personnel characterized R. N. as being mechanically inclined and his interest in mechanical activities was first noted when R. N. was involved in an episode in a small motor repair class. The class had rebuilt a small engine but couldn't get it to run. R. N. happened to be in the classroom, though he was not a member of the class, and he offered to fix it. After several hours, he had the engine working. On another occasion, R. N. rode a motorcycle to school, disassembled the engine and reassembled it perfectly. When the home school committee reviewed R. N.'s

> application for the program and his preference for the autobody course, these factors were considered important in approving his choice.

The case of R. N. demonstrates the somewhat general assessment of interests and abilities used in identifying appropriate courses of study or in evaluating a student's request for a particular one. Since standardized interest and aptitude measures were considered unreliable for use with deaf students, school personnel relied on their own observations of and experiences with the students as was noted in R. N.'s case. Specific information concerning the student's aptitudes, i.e., finger dexterity, eye-hand-foot coordination, form perception, spatial relationships, or color discrimination were rarely recorded in the cumulative record. Work situation data describing how the student responded to various work situations (e.g., organizing an activity, performing under stress, persuading other people) was never reported in any form where it could be systematically related to the work situations which the student might experience in the occupational education program being considered. Work trait considerations were generally restricted to global assessments of interest areas, such as the assessment of R. N.'s mechanical interests and involvements. At the Mill Neck site, where many of the students had been involved in a series of exploratory courses, pre-assessment of the student's work trait characteristics, was not utilized.

Evaluation and Placement Roles

Committee meetings, administrative conferences and counseling interviews were the primary procedures used in determining student placements in the cooperative program. Committee meetings for the review of student information usually consisted of school personnel although in instances where contradictory points of view between the home and the school had been identified (or could be anticipated), the parents were invited to attend. At these meetings, school personnel reviewed the student information and made placement recommendations. Administrative conferences with the parents were frequently conducted whenever conflicting opinions or problems in placement were evident. In these cases, the administrator or supervisor assumed an advisory role. In these conferences, records were reviewed and interpreted and the reasons for a particular placement recommendation were explained. Parents, generally, would agree to, but not always with, the school's recommendation. Most frequently, the parents seemed to rely on the school's determination of the child's potential for college. Even though some of the parents were hopeful (or believed) that their child would (or could) attend college they relied heavily on the advice of school personnel.

Students were usually the initiators of the request to participate in the program. Having become aware of the occupational education program and the courses of study offered, they pursued the possibilities with either their parents, their counselor, or both. Having expressed an interest by indicating a desire to participate in the program and by specifying the possible course(s) of study, the student was in the position of having to muster support from his/her parents and school personnel. Students were seldom involved in conferences between school personnel and parents when conflicts in judgment occurred. More often, students were contacted after these conflicts had been resolved. At this time, students would be advised of the plans that had been formulated. Students were seldom discouraged from participation in the program although they were often influenced in the selection of a course of study. When the student's first choice course of study had been rejected (either by parents or school personnel or both), the student was counseled accordingly. In these instances, the students usually agreed to enrollment in another course of study. The case of L. T. illustrates how the decision-making process accommodated the conflicting preferences of school personnel, parents and students.

> L. T. made application for the cooperative program indicating a preference for the commercial art course. The school committee recommended her participation in the program and approved her selection of the commercial art course. Her mother was notified by letter accordingly. L. T.'s mother approved of her participation in the occupational education program but disapproved of her enrollment in the commercial art course. She felt that L. T. did not have the artistic ability to succeed in such a course and, furthermore, she felt that L. T. would not be able to get a job in that field. L. T.'s mother suggested the data processing course and arrangements were made for L. T. to visit the data processing course. With L. T. still undecided, but essentially interested in the commercial art program, L. T. and her mother had a conference with the supervisor of vocational education at the home school. The supervisor agreed with L. T.'s mother and offered several reasons why it would be to L. T.'s advantage to begin her program with data processing. Eventually, L. T. agreed to enroll in data processing. [L. T. transferred to the commercial art course after 5-6 weeks.]

The stages of the decision-making process can be summarized as follows: Students initiate the process by making known their interest both in the program and in particular courses of study. School administrative-supervisory and pupil personnel service workers act on these expressions of interest by compiling information about the student, reviewing the factors involved, and making placement recommendations. Parent participation varies from little or no interest and involvement to a great deal. Their impact on the process is dependent primarily on how actively they wish to make known their feelings and preferences regarding the education of their child. Parents who assert their right to participate in the decisions that affect programming for their child can and do become active participants in the process. Some, despite disagreement with the school's recommendations, tend to accept them passively and a few evidence no concern for or interest in these decisions. The case studies show , however, that the procedures do provide opportunities for the active involvement of parents and that, when involved, they can very often influence the decision-making process, enforcing their own assessment of their child's educational needs.

Since classroom teachers are used primarily to provide background and/or specific information relative to an individual child's progress and class performance, it is reasonable to expect that they would have little, if any, knowledge of the decision-making process and the procedures used in arriving at determinations about student participation in the cooperative program. The case studies verify and explain the interview evidence indicating the slight involvement by teachers in selection period decision-making.

The case study data indicates that, in general, the same process procedures for decision-making were employed (with minor variations) at three of the four research sites. The process at Mill Neck, although essentially the same, was frequently extended as a result of student participation in the advanced level multi-occupational program. Program participation and course selection decisions were made after student information was compiled and evaluated. This decision was usually the result of deliberations by school personnel alone, although in exceptional instances parents became involved at the point where student information was still in the process of being compiled. Since parents frequently did not participate until the school committee had acted on the student's request, their influence was limited. In very few instances were parents asked to contribute work trait information which could have been helpful in the review/evaluation process. Were such inputs solicited and considered earlier, mutual agreement on program admission and course of study placement might have been more readily achieved. The procedures ordinarily delegate final decision-making authority to the parents in any case since they are required to confirm or reject the school's recommendation for their child. The tendency to limit parental involvement casts the parent in the role of an unrelenting critic. This arrangement tended to increase the likelihood of discord between parents and the school. Parents, like K. D.'s mother, who were notified belatedly became quite angry.

Recognition of a more collaborative role for parents in the educative process has been spurred by recent federal legislation. The language of the law implies a shared responsibility for parents with the school in decision-making efforts. Parents are being accorded a legally sanctioned partnership role in identifying the special needs of their child and in planning educational programs for them. This perspective supports decision making procedures in which parent-school contacts are characterized by direct, informal, personal, and cordial relations rather than the less personal, more formal contacts that have characterized school-home relations in the past. In place of notifying parents formally (a sort of summons) and impersonally when their presence, input, or concurrence with decisions is required, communication with parents should constitute a personal invitation to participate in an impending action or placement. Practices such as these would seem to encourage parent participation, not only as a legal formality, but as a relevant, constructive and valued contribution to the child's development. In addition, alternative educational programs should be explored with parents in advance of all decisions, so that advantages and disadvantages of these alternatives may be weighed and evaluated with the parent. In summary, decision-making should emphasize the importance of collaboration rather than the need or the right to be informed. A major objective in the area of cultivating relations between parent and school should be the development of strategies which not only increase protection of parental prerogatives, but elicit from parents acceptance of a fuller share in the decisions that affect their children's educational development.

THE ORIENTATION PERIOD

Orientation was defined as those activities and services planned by the school to help the students adapt more easily to the learning environment of the occupational educational center. An orientation program should familiarize the student with the physical facilities of the center including the layout of the plant and the location of various rooms and services (the administrative, pupil personnel and health offices). It should provide information about the program--school hours, rules and regulations, school traditions, citizenship standards, classroom practices and grading policies. It should help students to become acquainted with the various personnel whose services they may need while attending the center.

The block of time when orientation activities can be most helpful encompasses that period between the actual selection of a course of study at the center and the first few weeks after students begin attending classes. Since students are apt to experience higher levels of anxiety a week or two before classes start and to seek the greatest amount of help in adjusting to their new environment during the first 3 or 4 weeks of classes, orientation activities are concentrated usually on this crucial period of school adjustment.

Because many of the deaf students would be leaving the familiar surroundings and routine of their home schools and experiencing a completely new learning environment for a share of each school day, a concerted effort was made to determine what activities were provided to help the students bridge the gap between the known and the unknown. It was assumed that the orientation needs in at least three of the four research sites would be essentially the same. At the Mill Neck site, it was expected that the orientation needs of the deaf students might differ since many of the program participants had attended an occupational education center as part of its mid-day or multi-occupational education programs.

Interview methodology was employed to gather information about mainstreaming practices employed during the period of orientation. A total of 120 personnel from all eight institutions (the home school and the occupational education centers) were interviewed. Represented in this sample were administrative-supervisory staff (45); pupil personnel services (50); and classroom teachers (25). All administrative and pupil personnel staff were interviewed in each location and classroom teachers from the home schools and occupational educational centers were randomly selected. The interviewees were asked to identify the types of information provided and the practices or techniques used to disseminate it in the following areas: (1) school facilities and plant layout; (2) programs and school policies/regulations; and (3) school and support personnel (e.g., interpreters, tutors). Interview inquiries also focused on the types of information provided and the practices used to orient parents to the center and to the course of study their son/daughter was pursuing.

Orientation Activities for Students

The interview data indicated that approximately one-half (46%) of the personnel interviewed were unfamiliar with the types of information provided during the orientation period and one-third (33%) had no knowledge of the techniques used to help students adjust to their new learning environment. The pattern of responses regarding the types of information provided and the techniques for dispensing this information were similar among respondents from the schools for the deaf and the occupational education centers. In general, most of the interviewees in all four sites and in all personnel groups were unable to differentiate between the informational activities used in the pre-selection period and those which they cited as facilitating the actualintegration of the deaf students in the mainstreamed setting. In all four sites, the respondents referred to pre-selection center visits or tours, brochures describing the center or audio-visual presentations as the major orientation activities. No provision had been made to help students using late summer or pre-school meetings. When school convened in the fall, orientation was handled by the program coordinator in each site. In some locations, student needs were identified on an individual basis in an informal way. The students were encouraged to contact the program coordinator anytime they had a question or needed help.

In one location, the coordinator conducted a group meeting on the first day of school for the deaf students who were attending the center. In this group meeting, they were informed of attendance rules, test-taking procedures and support services available. The coordinator accompanied the students to their classroom and introduced them to their teachers. They were also provided with an I.D. card which they could use for identification purposes in the event they became lost or needed help.

During these initial weeks, the deaf students were left to their own initiative in resolving most of the difficulties they encountered. They did seek the advice and assistance of the coordinator from time to time. Many of the students, however, reported the use of second year students to assist them in finding their way around. While the actual nature and extent of their problems did not seem to compound the difficulties of adjustment to the new environment, some of the students reported anxieties or fear about "getting started" in a totally different learning situation. One student expressed her feelings this way:

> For several days before school started, I worried about whether I would be able to make it. I wondered if I would understand what the teacher said, whether the other hearing kids would accept me or make fun of me and what I would do if the course was too difficult. I really wanted some help. During those first few days, I made a lot of mistakes because I didn't understand the directions. I was scared and I was sure I wouldn't make it. But the teacher always helped me. At first, she wrote down the instructions. There were two other deaf students in the class and that helped a lot.

Beginning to take part in the learning environment with hearing students was a big change for many of the students. Classroom teachers were very helpful and, while many of them didn't have any knowledge of how the students were being helped in making this adjustment, they did take time to explain class rules, work routines and clean-up procedures. In some instances, the support personnel or other building aides were utilized to resolve questions concerning the physical plant or facilities.

During the three years of the study, no marked changes were noted in the orientation activities for students. The efforts of the coordinator and the classroom teachers and the general use of other support personnel to deal with every individual's problems on a day-to-day basis was believed to be sufficient. On the other hand, there was no evidence of continuous efforts to enable students to meet new situations easily or to help reduce the anxiety, confusion or bewilderment they experienced. In effect, "first aid" rather than prevention was the prevailing approach to the management of difficulties associated with the initial period of attendance at the center.

Orientation Activities for Parents

Orientation activities for parents can be an effective way of involving them in the school life of their youngster. A program to explain the purposes and philosophy of the program, to identify the problems their children may encounter in making the adjustment to the new learning environment, to help them identify behaviors that signal the need for help, and to suggest ways of communicating with appropriate school personnel can be an effective way of encouraging and improving school-home collaboration. A portion of the interviews with school personnel was directed at identifying the nature and extent of orientation activities designed to provide parents with the kinds of information and encouragement required to promote their active involvement in the educational activities and development of their child.

Approximately one-half of the school personnel were unable to identify any techniques for orienting parents to the operation or activities of the occupational education center. While parent visits to or tours of the centers and the distribution of brochures or pamphlets were mentioned, these methods of providing information were confused with those used in the pre-selection period. School personnel were unable to differentiate between the informational activities used to help parents and students make decisions about the participation in the occupational education program and those which were directed at assisting parents to understand and help their children during the difficult period of adjustment to the new school situation. In general, parents were not informed about the different activities, routines or behaviors which are a part of their child's experience in the mainstreamed environment. The activities provided for parents in the pre-selection period were designed to describe the program options available to their children. Subsequent consultations in which some parents participated tended to be persuasive in intent and concentrated on the assessment of their child's strengths and weaknesses and on their future educational or employment potential. Parents, for the most part, in all four sites were not alerted to the ways in which they could be involved, contributing partners, helping to improve the initial adjustment of their children to the mainstreaming experience. Since three of the home schools for the deaf had a large residential student population, extensive orientation activities for parents were difficult to arrange and schedule. Many parents, in all three of these sites, reside a considerable distance from the school. Yet, considering the magnitude of the instructional changes which this program involves, it seems essential that parent participation be more actively encouraged and solicited.

SECTION VI

INDIVIDUAL EDUCATIONAL PLANNING AND PROGRAM ARTICULATION

As students were mainstreamed into their different courses of study at the centers, their achievements and progress became a matter of concern to personnel in both institutions. Equally, there was a need to communicate with the home. In this cooperative model, as would be the case for any programs where partial mainstreaming is attempted, the nature and extent of communication between the institutions and among the personnel can be a deciding factor in meeting the goals of the program.

DEVELOPING THE IEP

During the first year of the study, the schools became involved in the implementation of P.L. 94-142. Since they were already involved in expanding the educational alternatives for deaf students through the cooperative occupational education program, their attention was directed to that part of the law mandating an "individualized education program" (IEP) and to the New York State Commissioner of Education's Regulations (which refer to the IEP as an "individualized education plan") establishing June 1, 1977, as the first target date for IEP preparation. Thus, during the first year of the study, the schools were involved in devising procedures and plans for the yearly preparation of the IEP for each student. Interviews were conducted during the second year with key administrative-supervisory personnel who were developing IEP procedures and their particular problems and progress were identified and discussed. Also, IEP's for a randomly selected group of students were gathered as preparation for a more intensive survey of the preparation and use of IEP's with the target population. In addition, a number of public schools affiliated with the Foreman Center were visited to seek information concerning the formation of the Committee on the Handicapped and the procedures formulated for placing students in accordance with P.L. 94-142.

In the last year of the study, intensive interviews were conducted in the Fall with eight teachers at each site (four teachers at the occupational educational center and four teachers at the school for the deaf). In the spring, interviews were conducted with eight teachers at each of three sites. At the fourth site, only the teachers at the occupational education center were available. Teachers of the students (14) on whom case study data were available were interviewed (except for two students at one site where the teachers in the school for the deaf were unavailable). The interviews focused on the inter- and intra-institutional preparation and use of the IEP.

The Preparation of the IEP

The IEP's were prepared by teachers in the home schools for the deaf on forms which each school had developed. The IEP's differ considerably among the four sites both in style and content and in method of preparation. In discussing the IEP's with the teachers and in studying the particular IEP's collected, several dimensions of their preparation were emphasized. Each of these will be discussed briefly in the following sections.

Form and content. In each of the sites, the policy regarding creation of an IEP provides, in varying degrees of specificity, for a statement concerning the annual goals, short term objectives, evaluation procedures, instructional materials, duration of service(s) and instructional implementer(s). In two sites the IEP is written in the form of behavioral objectives with the teacher stating as specifically as possible what the student will achieve ("the student will..."). In the other two sites, the goals are stated as information to be covered in the course(s) of study (e.g., grammar concepts: capitalization, punctuation). In very few instances were the IEP's reviewed actually individualized on the basis of a student's specific educational needs. In most cases the various components of a course of study were planned for an entire class and incorporated into the IEP with no particularization for the individual.

Only one site individually itemized the types of special educational and pupil personnel services to be offered (e.g., speech/auditory training; career education/counseling; medical services). None, however, specified in detail the individually appropriate objectives which these services would seek to accomplish. In another site, the IEP indicated the extent to which the child would be able to participate in regular classes on both a short and long term basis.

The IEP's specified the methods of evaluation to be applied in measuring student achievement. Teacher-made tests and worksheets, personal evaluation, bi-weekly and quarterly exams, teacher observations, skill tests, check lists, textbook exercises and individual projects were listed with no additional textbook exercises and individual projects were listed with no additional statements of specification most frequently, but without elaborating on either purpose or content. In two of the sites, however, additional information concerning the frequency of evaluation, the formulae for determining grades and/or the criterion to be applied were detailed.

Involvement of teachers at schools for the deaf. The IEP's were prepared by teachers exclusively for their individual courses of study. There was very little collaboration among the teachers of different subject matter areas or any evidence of mutual agreement regarding pursuit of common objectives. Teachers reported making little use of the IEP's in any regular or continuing fashion. While teachers had copies of the IEP (at least for their subject matter area), there was little reference to any jointly conducted, on-going study of student growth among the teachers in the schools. Some of the teachers felt it was unrealistic to write an IEP for the next year in the spring of the preceding year. Teachers were divided in their opinions on the usefulness of the IEP. About one-half of them felt it offered continuity and organization to their teaching and planning while the others felt it was not helpful. Most teachers commented on the time needed to write the IEP's. In reviewing the IEP's, it was quite obvious that some teachers had expended considerable energy and thought in developing the goals and objectives for their course of study while others had merely provided a course outline. In either case, however, it was difficult to identify from most IEP's where particular attention had been directed at individualization of objectives according to individual needs. The teachers tended to think of their subject matter first as was reflected in those IEP's where the course content goals were the same for every student in the class. Some teachers talked about their "differing expectations" or about different "levels of ability." It was obvious that they had different standards of achievement or performance for students or groups of students in their class. However, they did seem to grasp the intent of an "individualized education plan" as it is being promoted by legislation.

Speculating with teachers on changes they believed necessary to make the IEP more effective evoked a variety of suggestions. Some teachers felt that several teachers should share their perceptions of the individual's strengths and weaknesses in the joint preparation of the IEP. In the schools where interdepartmental or committee meetings had been held, the participants had found them beneficial. Others suggested up-dating the IEP at frequent intervals during the year (a procedure followed quarterly at one of the study sites). One teacher suggested that more emphasis be directed at the vocational, emotional and social aspects of the individual's development. Another teacher expressed the opinion that the IEP should provide for the development of "real life skills and behaviors" as well as for subject matter achievement. Among the teachers who suggested ways for improving the IEP, every teacher had a different idea. However, a majority of the teachers either reported no improvements were needed or "didn't know" how to improve the IEP.

Involvement of teachers at the occupational education centers. Classroom teachers at the occupational education centers were almost unanimous in their lack of familiarity with the IEP. None of the classroom teachers who were included in the interview samples had contributed to an IEP for a deaf student. One-half of the teachers at the centers did not know how an IEP was formulated or who participated in its development. Of the remaining teachers, three knew of other center teachers who had contributed to the IEP and the other five assumed that teachers in the school for the deaf, the program coordinator, or administrative-supervisory personnel were involved. Only one of the sixteen teachers interviewed at the centers mentioned the possible involvement of parents.

In general, occupational education teachers were unenthusiastic about a role in the preparation of the IEP. A number of teachers indicated that in the center deaf students are treated the same as hearing students and in much the same manner as they would be treated on the job. Therefore, they contended, there is no need for their involvement with the IEP. Others felt that their own instructional objectives could be used as IEP statements. They seemed willing to have their statements included in the plan but they were not interested in writing individualized course objectives. It appeared that the occupational education center teachers reacted much as the teachers in the school for the deaf. Time constraints and the potential for penetrating or changing an already established course of study are major barriers in the minds and attitudes of teachers.

A few teachers (about 25%) believed they should be involved in the preparation of the IEP. These teachers had a variety of ideas about individualizing course objectives, articulating course of study with the home school, establishing long and short term objectives and updating the IEP periodically.

Career maturation. The IEP's, as written, were oriented toward goals in the academic areas. Their primary emphasis was on subject matter attainment, although some instructional units referenced by IEP's related to job procurement (e.g., employment interviews) and some basic living skills (e.g., budgeting) are incorporated in the course structure. One school offers a course in occupational English which highlights job-seeking skills. In only one of the sites was any information concerning the goals of the course of study being pursued at the occupational education center included in the IEP. In the other sites, mention was made that the students were participating in occupational education at the nearby center, but no specific long term occupational or short term goals for the course of study were included. Although the schools acknowledge some career education activities, no specific mention of career education goals was cited. If the content of the IEP's has any bearing on the educational priorities of the school, it is obvious that subject matter achievement is most important. In fact, in one site a memo had been appended to the IEP noting that the individual's limited program of academic subjects resulted from participation in the occupational education program. Many teachers indicated a preference for the inclusion of more specific references to the manner in which educational experiences were expected to contribute to the vocational development of the individual.

Teachers were divided on the inclusion of objectives dealing with career maturation. Those who believed the career needs of the individual should be incorporated in the IEP referred to helping students learn to meet responsibilities on the job, how to go about finding and getting a job, and becoming more aware of career opportunities and requirements. Those who objected to the inclusion of career needs believed that students were too young to think about careers. It was obvious from the interview reports that most teachers conceived of career needs from the limited perspective of "picking an occupation."

Social development. Very little attention was directed in the IEP's at the socialization of the individual. An analysis of the IEP's failed to produce any concentration of long-range or short-term goals specifically related to social development. Space is provided in some subject areas (physical education, art) at one site for the assessment of class behaviors of a social nature, i.e., cooperation, leadership, punctuality, dependability. However, the long-term goal for the year is usually stated very generally (e.g., to assist the student in developing social ability, cooperation, and responsibility). Since these statements were included at only one site and since they were confined to non-academic areas, it is easy to understand why approximately one-half of the teachers interviewed suggested that more attention be directed to the personal and social needs of the child. On the other hand, a few teachers did not believe that teachers should be responsible for the student's social education while others believed that including this type of information in an IEP was an invasion of the student's privacy.

Year-end interviews produced little change in teacher understanding of the social needs as they might be incorporated in the IEP or provided for in day-to-day teaching. Although some concern for socialization was expressed in both the fall and spring interviews, it was evident that teachers either did not feel comfortable in this area or did not perceive socialization matters as a province of the classroom teachers. Several teachers expressed an interest in having social information included in the IEP. However, it was believed that these teachers viewed the IEP as a type of anecdotal or cumulative record where information about the child could be obtained.

Parent involvement. Schools provided for the parent's involvement in the development of the IEP and for obtaining the parent's approval of the IEP in different ways. In two sites, space is provided for a report of the planning conference in which the parent(s) participate. At this time, changes in the IEP can be requested by the parent and these changes are noted on a form which becomes a part of the IEP. At the other two sites, space is provided only for the names and signatures of those who were present at the IEP conference. In one site, three of the four IEP's reviewed contained a note indicating that the parents had been contacted (by letter) but had not responded. Since this way the only site where such a high percentage of "no response" from parents existed, there is some cause for concern about the effectiveness of communication with parents and the seriousness of the effort expended to seek parent involvement and approval.

While parent involvement in the preparation and approval of the IEP was beginning to expand (as a result of P.L. 94-142), parents still seemed to rely heavily on the judgment of school personnel for program planning recommendations. Even though it would appear that parent participation in educational planning will increase as the quality of compliance with the law improves, during the three years of this study only modest gains were being made against what appears to be a venerable tradition of passive reliance on recommendations by the schools.

The Use of the IEP

Teachers at the schools for the deaf were divided on the usefulness of the IEP's. Some used the IEP as a source of information about the student. Many indicated that its greatest value was in the thinking and planning which it generated. Those who did not find the IEP useful stated that they took too long to write or that they wrote the same plan for an entire class. None of the teachers interviewed reported any extensive use of the IEP. A small number had referred to them occasionally. Most of the teachers had not made any reference to the IEP.

Teachers at the occupational education center were interested in receiving input for their own instructional endeavor and in cooperating with schools for the deaf to insure that pre-requisite skills for their courses were included in the IEP. None of the occupational education teachers had made any use of the IEP's during the 1978-79 year.

Meeting IEP objectives. Although teachers reported making little or no use of the IEP, most teachers were able to identify how they determined if and when students accomplished an objective. Teacher-made tests, quizzes, oral questions, homework and worksheets were mentioned as the means for assessing student achievement. When asked if changes or modifications in the IEP had been made during the year, nearly all of the teachers reported no changes. In probing for reasons why so few changes in the IEP's had been effected, teachers indicated "lack of time" and "no changes were necessary." It was quite obvious that teachers were making little use of the IEP. At this point, the IEP was considered an added chore. Further, teachers apparently found little of value in the IEP and its impact on teaching behavior was of little or no consequence.

The role of the occupational education teacher. The center teachers expressed a need for some background information about the student before attempting to write an IEP. Age, academic achievement levels, degree of hearing loss, speech and lip reading ability, attention span, prior shop experience, mechanical ability, motivation, restrictions for safety reasons and health factors affecting shop performance were areas they identified as basic to the specification of long and short term goals in an occupational education course. Several teachers indicated a preference for writing the IEP after they had worked with the student for a few weeks. Some felt that it would be most desirable to review and update the IEP every quarter as they became increasingly familiar with the student's progress, strengths and weaknesses. Stating the goals in the form of behavioral/skill objectives was preferred by an overwhelming majority of the teachers over the specification of goals using a course outline.

The occupational education teachers at the center (75%) believed the IEP should be individualized for each student. They specified the following areas as essential goals for consideration: mechanical or manipulative ability; work performance skills, attention span, safety factors due to handicap; physical problems in work performance. Some of the teachers felt that provisions for acquiring background knowledge (e.g., trade terminology, mathematical concepts) should be a part of the overall individualized plan.

The teachers were divided on the inclusion of social/personal goals. While cooperation and leadership were frequently mentioned as desirable classroom objectives, over half the occupational education teachers did not feel it was necessary to specify social development goals. On the other hand, all but three of the 16 teachers did feel it was necessary to consider career goals. Information about the career aspirations and the realistic prospects of attaining the stated goals were deemed very important in helping deaf students to evaluate their own progress and assess their on-the-job potential.

During the three years of the study, the schools made considerable progress in developing the IEP. It must be remembered that the responsibility for IEP preparation is a new and unfamiliar burden, which the schools must learn to cope with through experience. Guidelines for developing IEP's are hopelessly inadequate as a basis for increasing sensitivity to the needs that IEP's should address. Deficiencies or inadequacies in IEP's noted in the course of this study are less a criticism of the schools than a commentary on the state of the art and a recommendation for the future. Most significant were the schools' gains in specifying the academic goals. The instructional areas which each school for the deaf value most highly can be determined by a careful analysis of their IEP's. While the sites vary widely in their emphasis on the academic realm, none of the sites have included the occupational education program as an integral part of the IEP. There are, however, indications from the schools that this deficiency has been recognized and is in the process of being changed. Parent involvement in the preparation of the IEP, while improving in three of the four sites, is still essentially a matter of explanation and approval-seeking. Parents are not yet viewed seriously as informational resources who can contribute background information that would be helpful in the planning process. The lack of parent participation seems to be related to the emphasis which the school places on academic instruction. Schools which are highly subject matter oriented tend to exercise more authority in the determination of goals than do those that are more concerned with the social, emotional and career aspects of human development.

IEP articulation. Teachers at the schools for the deaf recognized the potential contribution occupational education teachers could make to the IEP. They believed that the classroom teachers in the occupational education centers should prepare an IEP for the students in their classes. In raising questions about the involvement of the occupational education teacher in determining IEP statements to be attended to in their courses at the schools for the deaf, teachers were ambivalent. Two teachers were against occupational education teacher input indicating they might have to teach occupational education vocabulary. This, they declared, would be too time-consuming. On the other hand, several teachers were enthusiastic about the possibilities of articulating IEP statements with center personnel. They felt this would help them understand better how the deaf students were getting along in their courses at the center and would provide opportunities for the school and the center to work together in the attainment of IEP objectives.

Although the occupational education teachers did not view the preparation of IEP's for their courses of study enthusiastically, a majority were interested in cooperating with teachers of the schools for deaf in establishing the IEP. In some instances, the occupational education teacher, like the teachers at the home schools, viewed articulation as a means of obtaining more information about the students (e.g., finding out about their writing and math skills, home background, ability). Others viewed this as an opportunity for providing the home school teachers with information about academic skill deficiencies (e.g., math, reading) of deaf students in their classes. Joint meetings and visits to the classes by teachers in both schools were suggested as a means of extending the articulation effort and of providing better for student achievement.

PROGRAM ARTICULATION

There is a natural sequence of school-home collaboration beginning with the informational needs of students and their parents in the pre-selection period. As they become fully informed of the educational options available, their efforts are concentrated on the joint exploration of the alternative and culminate in the determination of a course of study. In the preparation of an individualized educational plan and its implementation an important factor to be considered is helping students and their parents anticipate and adjust to the experience of a new and unfamiliar learning environment. Orientation to bridge the gaps between separate special education and the mainstream could contribute to creating a sound basis for ongoing articulation of instructional experiences and the continual monitoring of student growth and development.

As students were mainstreamed in the occupational educational centers, their achievements and progress, as well as their learning problems and deficiencies, were matters of primary concern to personnel in both the home schools and the occupational training centers. Monitoring student progress in a cooperative mainstreaming venture requires an open, but well established communicative network between personnel in the participating institutions and between school personnel and the home.

First year interviews were conducted with 120 school personnel (45 administrators, 50 pupil personnel service workers, and 25 teachers from the home schools for the deaf and the occupational education centers at all 4 research sites) to obtain information pertaining to the articulation of efforts to promote and monitor student progress. Specifically, interviewees were asked to describe how classroom teachers or other school personnel within and between the participating institutions communicated about student needs and progress, curricular programs, or school routines. Special atttention was directed toward the description of communication patterns, identification of communication problems, and the roles enacted by participants in the communication progress. Since the home is presumably a vital link in the communication process, inquiries were also made to identify the nature and extent of communication and collaboration between home and school.

It was discovered that interviews focusing on the process itself tended to elicit informative, but rather non-specific data regarding articulation practices. It was found that only by attending to specific events in the communication process could a clear picture of actual practice be constructed. Interview results tended to represent the process rather vaguely or to confound idealistic articulation goals with practical reality. During the second year case studies of 8 seniors were initiated to identify the types of learning and adjustment problems that developed and to describe in more specific detail the communicative process that characterized the articulation efforts.

In selecting these 8 subjects for case study from the 1977-78 target population, scholastic ability, communication skills, and achievement in math and reading were considered. All students in the target population were rated high, average and low on all three variables. The 8 subjects selected included one with a high rating on all 3 variables, 6 in combinations of high, average and low, and one with low ratings on all 3 variables. The case studies of 6 juniors also initiated during the second year, were continued during their senior year. Data on these students, as seniors, was used to further identify the learning problems that emerged. In all, case study data on 14 students served to provide detailed information on articulation between the two institutions.

The Role of the Program Coordinator

The interview data revealed that about 25% of the personnel in both institutions had no knowledge of the network for communicating about student needs or progress, school routines, or curricular problems. Another 25% indicated that little or no communication existed between teachers at the occupational education centers and teachers at the schools for the deaf. In all four sites, the program coordinator was cited as the central figure in the communicative process. School personnel attributed a significant role to the liaison function of the program coordinator in communicating about student needs and problems and in dealing with curricular problems and school routines. The case of T. L. illustrates the role of the coordinator in instances where learning deficiencies had been identified.

> During an exploratory experience in the machine shop course, T. L. had considerable difficulty with shop math. T. L.'s math skills in percentages and fractions were insufficient for satisfactory performance. T. L. went to the program coordinator and requested remedial help in math. The coordinator asked the home school language teacher to help T. L. with technical vocabulary and terms and the math teacher to provide some remedial instructions in the basic math of fractional measurement. From time to time the machine shop teacher at the center would send T. L. to the coordinator for special remedial instruction. When T. L. enrolled in the machine shop course the next year, he still had difficulty with percentages and the shop terms. Both his math and language teachers at the home school continued to provide remedial instruction in the areas that made it possible for him to perform satisfactorily in his machine shop course at the center. T. L. continued to improve. In the second year of the machine shop course, the machine shop teacher reported that T. L. was no longer having any difficulties with the mathematical aspects of the course.

In T. L.'s case, the program coordinator served as the main link in the communicative process between the two schools. In lieu of direct communication between the machine shop teacher and the math and language teachers, the program coordinator initiated the necessary remedial instruction (and in some other instances, provided the actual instruction at the center).

Although it would seem more efficient and more economical if classroom teachers were to communicate directly, a number of barriers to direct communication were identified: (1) the distance between the two institutions inhibited joint teacher conferences or meetings, (2) conflicting schedules eliminated common free time among teachers in both institutions, and (3) the teachers in one institution did not know the teachers in the other institution. These barriers, it is believed, were sufficiently real to necessitate the "third party" mediation by the coordinator. On the other hand, a small percentage of interviewees felt that the program coordinator was difficult to contact and that information about the students was distorted as it was communicated through channels. A few also indicated that differences in school policy tended to block communication.

The program coordinator's role in the articulation of program activities is one of "intercessor" not only between classroom teachers in the two institutions but between the school and the home and the community. J. C.'s case illustrates how the coordinator is expected to mediate among these various groups.

> J. C. is a senior in the printing program at the center. In February of his senior year, Mr. T., the program coordinator was advised by the home school high school supervisor to locate a job for him. Mr. T. met first with the printing teacher to discuss J. C.'s work skills and job possibilities. The printing teacher indicated that J.C. should take an additional year of printing to enhance his skills and build up his self-confidence. With this information, Mr. T. contacted the home school guidance counselor to obtain further information about J. C. and to ascertain if the parents had been consulted about J. C.'s employment potential and possibilities. Mr. T. decided that he should talk with the parents before investigating employment possibilities further. By the time Mr. T. was able to contact the parents, they had learned from J. C. that the school was trying to locate a job for him. Mrs. C. called the school and demanded an immediate meeting with school officials. A meeting two weeks hence was arranged. In the meantime, Mr. T. was informed by the employment counselor at the center that a small printing firm in the area was interested in employing J. C. to operate a small lithographic press. The employment counselor, Mr. T. and J. C. visited the potential employer at his plant. J. C. was hired immediately. It was agreed he would continue to attend printing classes at the center in the morning and work at the plant four afternoons per week.
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> The parents, the school guidance counselor and Mr. T. met as scheduled. The parents, who were not as upset at this point as they had been at first, feared that J. C. would be fired if he were not supervised by Mr. T. Mr. T. agreed reluctantly, but he soon discovered that J. C.'s supervision would not be necessary. The employer indicated he would rather provide himself any necessary supervision, since J. C. was doing very well.

The responsibilities of the program coordinator seem to have evolved gradually in each of the sites. While their duties are not specified with great precision in a formal job description, it is obvious that they are involved in solving day-by-day problems that arise in the operation of the program and that they monitor closely the progress and performance of the deaf students at the center. As a result of their efforts, most school personnel consider the coordination of the program as largely, if not entirely, their responsibility. J. C.'s story exemplifies the extent of their contacts in the institutions, with the home, and in the community. Since the program coordinator is the only professional person at the center with direct linkages and immediate access to the school for the deaf, it is easy to understand why center teachers use them as sources of help and referral. Their involvement in the communication network (as shown in the case of J. C.) helps explain why a substantial number of personnel in both institutions at each site do not feel that communication is a barrier in articulating different facets of the program.

Mainstreaming Problems

Despite the outstanding efforts of the coordinator, there are many problems that occur and many programmatic adaptations and modifications that are essential to successful program operation and articulation. Some of the learning problems occur as a result of deficiencies in basic English skills, reading, or mathematics. Communication difficulties with deaf students were common, although these problems tended to dissipate as students adjusted to idiosyncracies in instructors' communication efforts or as instructors became more familiar with techniques that improved communication with the deaf students. The availability and use of support services (interpreters, tutors, teacher aides), posed instructional and scheduling problems that had to be worked through. The case studies provide data that illustrate how these problems occurred and how they were handled.

Basic skill deficiencies. Many deaf students experienced difficulty with the subject matter in their classes at the centers. One teacher, who had worked for several years with deaf students indicated that the deaf students were unable to attain the same achievement criteria as their hearing counterparts. In his experience, the deaf students had difficulty reading the written quizzes and instruction sheets and understanding the technical vocabulary in the textbooks. As a result, this teacher adjusted his expectations and provided more individualized assistance and demonstration help. In grading students, he weighed skill performance more heavily than the written tests and quizzes.

In one class, the occupational education teacher discovered that the deaf students were having considerable difficulty reading the technical material in the textbook. He contacted the program coordinator who in turn spoke with the English teacher at the home school. The English teacher agreed to rewrite a portion of the textbook. When this was accomplished the occupational education teacher reviewed the revised material. The success of this first venture has resulted in similar adaptations of other sections of the text. In addition, the English teacher prepared a worksheet to accompany the rewritten material. Reading difficulties of this kind were frequently encountered and were not always as successfully alleviated. Willingness of teachers to devote time and energy to alleviating specific barriers to individual progress in occupational courses was often that "extra" effort that made the difference.

The students recommended for occupational education were generally those for whom high school education was considered terminal. Although it cannot be concluded that only slower or less motivated students were recommended for occupational education, there was some evidence, albeit subjective and sporadic, that students who evidenced potential for any form of post-secondary education were urged to continue participating in college preparatory programs. Most of the occupational education students wanted jobs upon graduation and were hopeful of finding work that was related to their occupational training.

In several instances, some type of third year training at the center was recommended by the occupational education teacher. Enabling the deaf students to perform according to "trade standards" in two years was not always possible. Some occupational education teachers indicated that math, reading and English skills, while improving, were not as fully developed as training-related employment would require. Work performance skills, especially those dependent on basic academic skills, could be improved, they felt with additional training. Identification of basic academic skills and work performance skills that required additional improvement was often difficult to determine, however, since they were rarely mentioned in reports to parents or as part of the IEP. In the absence of such evidence, it remains uncertain if such instances of delayed progress are, in fact, attributable to the limited duration of training courses or to the existence of specific, remediable obstaches to progress.

In many cases, progress in knowledge and work performance skills showed marked improvement in the students' second year at the center. Students became not only more comfortable and secure in the occupational education setting but evidenced considerably more ability to act responsibly and independently. Teachers were more enthusiastic in their appraisals of student progress. Student adjustment to the learning process in a hearing-oriented environment was noted repeatedly in the case study data. In these particular instances marked and often dramatic improvements appeared closely related to explicit attempts to identify and remove specific obstacles to progress in the occupational courses.

Communication in the classroom. One of the most frequent problems for deaf students in occupational education was the teacher's presentation rate. Students often complained that the teacher talked too fast and wouldn't (or couldn't) slow down if asked. This situation tended to occur most often with teachers who had a deaf student in class for the first time. When this occurred, the students were often reluctant, especially at first, to ask the teacher to slow down. It was only when encouraged by friends, another teacher, or their parents, that they were able to approach the teacher. Many deaf students, as might be expected, had the greatest difficulty with the lectures. Some teachers were unwilling to modify or change techniques to which they attached significance in the preparation of students for state licensing examinations. In several instances, the inability or unwillingness of the teacher to accommodate difficulties experienced by the deaf students resulted in eventual discouragement and a request to transfer to another course of study.

Many teachers, most of whom possessed very limited sign or fingerspelling skills, discovered that any means of communication that worked with a student was appropriate. Consequently, many teachers would gesture, mime, write notes, talk or act out whatever message they wished to convey. Students generally responded favorably to any attempts the teachers made, when it was obvious they were trying. It has been apparent since early in the study that a large measure of student success has been attributable to this combination of inventive communication efforts of teachers and their motivational impact on students.

The availability and use of support services. The classroom teachers reported that the deaf students, in general, needed an interpreter in order to follow the classroom lectures. Many felt that individual instruction following any class lectures or demonstrations was essential. In many instances, the teachers reported that learning was simply a slower and more painstaking process for deaf students in their courses. In group explanations, hearing students often understood readily how to deal with a work task or skill through a verbal explanation. Deaf students, not always comprehending all the details had to be shown, usually through a guided demonstration followed by a practice experience under teacher observation. During this observation, the teacher could correct any work task errors in the procedures or skills employed. However, this approach often required more instructional time than was readily available.

Some students relied heavily on the services of an interpreter indicating that without such help it would be impossible for them to continue. In some cases, the students adjusted to functioning without an interpreter, simply because one could not be made available on a regular basis. Others were unable to make such an adjustment. While the factors that made the difference were not easily identified, some students simply learned how to increase their initiative and independence. These students would readily seek explanations from other students, both deaf and hearing, would ask questions and, in general, found ways to circumvent and compensate for the loss of direct instructional benefits. There was some evidence to indicate that these students were beginning to take responsibility for their own learning and were discovering that they could manage to get along in spite of greater difficulties. On the other hand, more timid students, who required for comfort the accustomed anticipation of special needs afforded by schools for the deaf, found this adjustment difficult or impossible. Frequently these were the students who were identified by teachers as "marking time" or who withdrew from occupational courses to the protective security of the school for the deaf.

The hearing students were constant sources of help. In many instances they provided needed support by offering to demonstrate work tasks, repeat instructions, communicate with the teacher, or help a deaf student in any way they could. Teachers who recognized the value of these working relationships were able to pair deaf and hearing students effectively for teaching purposes. Peer teaching and task modeling were frequent practices that enabled the deaf students to attain skills that might not otherwise have been possible. Such work-based relationships in the classroom often resulted in the benefits of developing friendships -- some that extended beyond the school and classroom environment.

That sufficient interpreting service was not available in any of the four sites was repeatedly noted. In every occupational education center there was a constant demand for more help. In one center, community volunteers were utilized on a regular basis. While it must be recognized that more interpreting services would have prevented some of the problems that did occur, the lack of sufficient interpreting services resulted in the exploration of alternative practices to fill the void. Although optimal instructional conditions should not be lightly sacrificed some of these practices, especially peer teaching, have considerable merit. In making greater use of these practices, it may be possible not only to improve accommodation of the learning environment to the handicapped but to satisfy the need for other facets of human development as well.

Tutorial services, though the need for them was often noted, were not extensively employed. In most instances, the remedial needs of the deaf students were either unattended or referred to an appropriate teacher in the home school.

Work behaviors. During the second year of the program, most students were beginning to show marked improvement in their work behavior. Though first year deaf students were often characterized as dependent, distractable, and easily led, their second year ratings tended to indicate a more persistent approach to work tasks and greater independence, alertness, and creativity. The combined effect of skills training and work experience on the effectiveness of their work behavior was notable. While their work ratings continued to indicate a need for more guided training, they also indicated growth in competence and in maturity of work attitudes and values. It would appear that some individuals have achieved a sufficiently stable set of skills, habits, and values that will enable them to succeed readily in the world of work. Others seem to need additional time and training to establish and/or improve these traits and test them in their work behaviors.

The Involvement of Parents

Parents were most commonly informed of students' progress through a report card routinely issued about every 10 weeks. When problems of some severity arose, parents were contacted or called in for a conference. Parents could maintain contact with school personnel on their own initiative by attending regular PTA or other occasional gatherings such as open house night. Most parents however, felt they were ill-informed about student progress. In spite of this, most also indicated that, unless contacted, they assumed their child was performing adequately in school. When interviewed, parents stated that they relied on the reports by the children themselves as a main source of information about progress. Many of the parents were totally unfamiliar with the program, plant, or personnel at the occupational education center. However, they were more familiar with personnel at the home school for the deaf. Most of the parents initiated any inquiries about their child with the program coordinator or with the high school supervisor at the school for the deaf. Contacts with teachers at the home school were minimal, and there were even fewer contacts with teachers at the occupational education center.

Although the preparation and implementation of the IEP was in its initial stages during the time when the data on these students were being collected, parent participation in this exercise was limited largely to approval of course selection. With the initiation of the IEP, it would have been anticipated that yearly conferences would begin to be held to review student progress and to formulate the IEP for the succeeding year. There were some instances where students changed courses of study without parent notification and without benefit of parent approval. It was found that some confusion existed among school personnel about responsibility for parent notification, consultation, and approval in such cases. It is also well established that it is often difficult to elicit parent involvement in the process of educational decision-making. Consequently, it is often convenient for both school and parent, if the school appropriates parental prerogative and responsibility in the interests of efficiency. Students, however, are entitled not only to efficient and productive educational services, they are entitled, legally and morally, to full exercise of parental advocacy on their behalf. It is especially important that educators begin to exercise scrupulous vigilance against inclinations to streamline decision-making at the expense of advocacy. It is equally important, however frustrating, for educators to provide insistent encouragement to parents to exercise rights and obligations to their children's educational development.

SECTION VII

ESTABLISHING AND MAINTAINING AN EFFECTIVE LEARNING ENVIRONMENT

The success of mainstreaming is dependent on the creation of a learning environment which handicapped and non-handicapped students can share in a manner conducive to satisfying the developmental needs of both. While a number of considerations are necessary in establishing and maintaining such a setting, none is more central or more critical than the role of the teacher in the classroom. What he/she chooses to do and how he/she elects to do it will, in large measure, determine the effectiveness of the program. Meaningful and relevant approaches to instruction and its evaluation depends on the willingness of teachers to modify and adapt educational practices in ways that maximize the benefits of available facilities and resources. Adaptive mechanisms and feedback systems which foster accommodation of program and staff to the changing needs of all students can be developed through sound educational planning. In the short term, this means making the best use of the educational resources to meet student needs. Over the long term, however, individualized educational planning requires the coordinated use of multiple educational resources to cultivate progressively more demanding learning environment that challenges, but never discourages, the learner.

The educational programs and services offered by the four cooperative sites were examined with regard to the administrative goals that undergird the policy and operational aspects of the cooperative arrangement between the schools for the deaf and the occupational education centers. Specific practices and procedures used to operationalize the mainstreaming of students in the occupational education classrooms were explored and delineated. Particular attention was devoted to identifying both the need for and the nature of modifications to the instructional strategies ordinarily employed in the occupational education classroom. Changes introduced into the act of teaching, the reasons for their necessity, and the manner of effecting them were the primary targets of inquiry.

ADMINISTRATIVE GOALS

Interviews during the first year of the study with 47 administrators (20 from schools for the deaf and 27 from the occupational education centers) including chief school officers, building principals, and program or departmental supervisors, were conducted to gather information on the specific goals and objectives for the cooperative program. It was of particular interest to examine the views held by this group regarding the goals and purposes of occupational education, and to consider the implications of these views in terms of specific educational practices. In describing the general goals and purposes of occupational education, administrators cited five goals: general preparation for employment, specific skill training, occupational exploration, personal development, and socialization of the individual.

Administrators who viewed the primary purpose of occupational education as general preparation for employment emphasized the acquisition of work habits and attitudes, understanding of the world of work and the economic aspects of society, and the learning of work behaviors as basic objectives.

Administrators who stressed the goal of specific skill training were more attracted to the development of "saleable" or marketable job qualifications and the mastery of entry level trade skills. They believed that instruction should be geared to teach task proficiency through provision of ample opportunity for students to practice work skills and develop work behaviors in the course of their training.

Those who mentioned occupational exploration as a goal referred to objectives which would familiarize students with a variety of vocational choices, facilitate their recognition of career options and goals, and foster an awareness of their abilities and interests. They expressed a concern for the development of a program that would provide young people with a realistic conception of job duties and requirements and enable them to gain experience with a variety of work tasks. Experience designed to help students explore and test their strengths and weaknesses and to relate this process of self-discovery to the world of work was considered an important part of the occupational education program. Few administrators, however, stressed the importance of personal development in general or the importance of promoting achievement of self concept in particular. The few who did talked about the contributions of occupational education in helping students to develop a sense of identity, in finding a positive self-image and in establishing self-confidence. Occupational education, they maintained, should provide opportunities for students to savor the good feelings that emanate from successful accomplishment or achievement of a task or set of tasks. They were not specific, however, in defining means by which these aims would be accomplished.

Some administrators, indicating the importance of interpersonal relations (relations with peers, supervisors and subordinates) in the world of work, cited socialization as a primary goal of occupational education. Work role relationships, getting along with others, being able to give and follow instructions, were work behaviors which they believed should be emphasized in the classroom. Knowing how to get along with others in the workplace and being attuned to the interpersonal aspects of on-the-job duties and responsibilities are relevant and realistic goals to be sought.

The goals of occupational education enunciated by administrators presumably constitute the authoritative rationale from which operating policies, that is program practices and procedures, derive their justification. Ultimately, it is the consistency of practice with goal statements by those responsible for administrative leadership and decision-making that justifies procedures. It is important, therefore, to keep these administrative views in mind since they implicitly define the operational aspects of occupational education for the deaf in the mainstream environment.

INSTRUCTIONAL STRATEGIES

Interviews and classroom observations were used to identify and describe the instructional strategies employed by teachers in the occupational education centers. During the first year, interviews were conducted with a random sample of occupational education teachers (14), with deaf students enrolled in the occupational education classes (27), and with pupil personnel workers employed in schools for the deaf (8) and in the occupational education centers (18). The interviews with the 40 occupational education teachers and pupil personnel workers inquired initially about the specific methods they used regularly in teaching nonhandicapped students. When the nature of their instructional practices in the regular classroom had been established, the interview turned to the need for changing or modifying those practices to accommodate deaf learners. Information was also collected to identify the procedures used to insure the safety of deaf students in the laboratory or shops, necessary changes in school rules and classroom regulations to maintain an efficient learning environment, and the nature of support services essential to the learning process.

The first year interview data provided a broad base from which to examine the teaching behaviors of the occupational education teachers. The first year interview data was used to devise a classroom observation schedule which could be used to record the actual learning conditions in the mainstreamed classroom. During the second year formal classroom observations were conducted at each of the four sites in the fall and spring terms. The classroom observation guide was used in a total of 48 randomly selected occupational education classrooms where teachers were observed for one full class session. These classroom observations provided data for the description of the actual practices and techniques employed under mainstreaming conditions. Through the observations, information pertaining to the objectives of the learning experience, the nature of the instructional activities, the planned and unplanned instructional adaptations, to benefit the learning difficulties of deaf students, the safety measures employed, and the instructional use of support personnel were obtained. In describing the learning experience itself, information concerning the subject matter content, the format in which it was presented, communication procedures, the participation and performance of deaf students, teacher provisions for deaf students, and instructional sequences or episodes were noted. Particular attention was given to the visual dimension of classroom practices--the materials used, the classroom seating pattern and the placement of deaf students, and the location and movement of the teacher during the various classroom activities.

Five types of verbal/manual communication (speech, sign, finger-spelling, writing, miscellaneous) and six forms of body language (facial expression, dramatization, pointing, gesturing, showing, miscellaneous) were used to characterize the forms of teacher-student communication. A checklist, based on first year interview reports, was devised to facilitate the recording of direct communication between the teacher and the deaf students.

Whenever necessary, follow-up interviews were conducted with the classroom teacher or with one or more deaf students in the class to clarify the purposes of certain classroom behaviors or to seek additional information about an instructional practice that had been employed. These follow-up interviews permitted the observers to elaborate more specifically on the classroom performance of both teachers and students to explain in more detail the nature of a classroom activity. During the third year, informal interviews and observations were used to obtain any additional information or explanations which would help in describing the classroom environment in the occupational education centers.

The observation and interview activities were planned to insure access to instances of seven different instructional strategies: lecture, demonstration, classroom discussion, "hands-on", visual aid presentations, field trips and classroom testing. Each of these instructional approaches will be discussed separately.

The Lecture Method

The use of the lecture in the occupational education classroom is quite common. In those courses of study where a theoretical understanding is essential in skill development, more time is spent in lecture than in those courses where practice or "hands-on" experience may be more helpful. Thus, it was observed that in courses such as practical nursing, cosmetology or child care the lecture was used more frequently than in other more practically-oriented courses such as food service, carpentry or autobody. Lecture periods tended to be short, lasting no more than 20 or 30 minutes, and were ordinarily followed by some form of related activity. Individual lectures were organized around a very limited range of objectives or content area and were directed at the entire class. Classroom teachers were accustomed to the short lecture and used it frequently, although not daily, in their regular classes. In the mainstreamed class, the same teachers found it necessary to adapt their presentation methods. About 50%

of the teachers employed their normal speaking rate. Some used a pause in the lecture presentation to check the deaf student's ability to follow the material. This was accomplished by addressing the deaf student directly, by intentionally observing the deaf student, or by casual communication (facial expression or sign indicating--("do you follow me?"). Body language, especially pointing or gesturing, was used far more frequently than verbal/manual modes. Although many of the teachers had been oriented to or trained in sign language, few made any extensive use of signing or finger spelling in lecture situations. For many deaf students lecture material had to be at least partially reviewed or re-explained, and sometimes in its entirety. When support personnel were not available some teachers would meet separately with the deaf students after the lecture and go over the material again. Others would ask a hearing student to re-explain the material. The technique of pairing a hearing associate with a deaf student (peer teaching) was observed on a number of occasions. Both teachers and deaf students seemed to find this technique most helpful. Hearing students who acted in this capacity were usually most willing to exercise the teaching role and did not view it as a detriment to their own class involvement or learning opportunity. In fact, some felt it contributed substantially to their own learning.

When support personnel were available (interpreter, teacher aide or project coordinator), they would often work separately with the deaf student(s). A trained interpreter, the project coordinator, or another individual capable of interpreting was available in 56% of the observed lectures. In those sites where interpreters were regularly available, the teacher could provide the interpreter with the lecture material in advance. While this did occur a few times, it was not a regular practice. The shortage of interpreting personnel and the difficulties that teachers experienced in the advance preparation of formal lesson plans were the principal deterrents to the advance briefing of interpreters. In general, it was considered quite unrealistic to expect teachers to be able to plan ahead with sufficient assurance that the lecture would occur at a certain time. Advance planning seemed most appropriate when teachers had scheduled the introduction of a new unit. Most other uses of the lecture were more spontaneous. The decision to lecture was often the result of the teacher's direct observation of class progress or sudden detection of specific learning needs.

During the lecture presentations, observation attended to both the seating of the deaf students and their involvement or performance during the presentation. In only a few instances (17%) were the deaf students isolated or seated where their view would be obstructed. In a majority of the lecture situations, the deaf students were seated with or among the hearing students. Teachers were alert to the seating accommodations necessary for deaf students and, when necessary, provided special seating arrangements for them. While a few instructors (11%) assigned the deaf students a special seat during lectures, most did not. In two instances, for example, the deaf students were seated at the front of the classroom. The deaf students were largely "on their own" and their behavior during the lectures much the same as that of their hearing counterparts. In a few instances the deaf students disrupted lectures or left the room while lectures were in progress. However, it was not observed that these instances of disruptive behavior were significantly different in frequency or intensity from that of the hearing students. Generally speaking during lecture presentations, deaf students were attentive and seemingly involved.

Most teachers (83%) used books, charts, handouts, posters, blackboard diagrams or an opaque projector in conjunction with their oral presentation. Lectures were commonly supplemented by questions. However, in a substantial proportion of the observed sessions (33%), the questions were raised by hearing students with no participation by or involvement with the deaf students. When hearing students asked questions, the teachers seldom made any effort to acquaint deaf students with the question. Moreover, deaf students themselves were not encouraged to ask questions. In a majority of instances, the teachers stood or sat directly in front of the class or in proximity to a blackboard or screen. They appeared to be aware of the importance of facing the class, and in only a few cases did they speak with their backs to the group.

Demonstration

Demonstration, as an instructional technique, is common in the occupational education classroom. In all locations, it was used with the total group, with small groups of students, and with individuals. Most frequently, it was employed immediately after a classroom lecture and just before a "hands-on" experience. In a substantial number of classroom observations (46%), demonstrations were directed at the entire class rather than at subgroups of students (27%).

Most demonstrations involve the actual materials to be used or a process to be observed. Teachers, in many demonstrations, work at a machine, a table or at a particular location in the shop or laboratory and arrange the students around the demonstration area in a manner that permits maximum viewing and hearing. Teachers tended to treat the deaf and hearing students alike in these situations. In 27% of the observed demonstrations, the deaf students isolated themselves from the group. In these instances, it appeared that the deaf students were unable to place themselves in a position where they could see the instructor or the activity clearly. Support personnel were available, usually interpreters, for about one-half of the observed demonstrations. In these instances special arrangements were made to insure accessibility of the demonstration activity to the student and the interpreter.

Individualized help was often provided to deaf students following the demonstrations. Support personnel would help the individual by reviewing the procedures shown or by supervising the student while he/she performed the activity. Just as peer teaching was utilized as a follow-up to lectures, peer pairing another form of individual help, was used by teachers frequently to supplement demonstrations. In peer pairing, the teacher would assign one or two hearing students to work with a deaf student. Peer pairing presumably permitted the deaf student to participate in the work task with other students. In the event, however, that the deaf student may have missed some part of the demonstration, the peer associate could help remedy the situation. Peer pairing in work tasks was a regular activity in many occupational education classes. It is an easy technique to use in adapting class procedures to accommodate the deaf student since the teacher needs only to establish the peer pairs (or groups) to the learning advantage of the deaf student. Peer teaching was also used occasionally as a follow-up adaptation of the demonstration technique. During teacher demonstrations deaf students tended to seek help from hearing students rather than the instructor.

As in the lecture method, body language techniques of communication were used far more frequently than verbal/manual modes. Pointing and showing were most frequently employed. Dramatization, a technique that lends itself to this instructional strategy, was successfully used by several teachers to emphasize or clarify the instructional content of demonstrations. This technique appears to possess considerable potential as a means of improving communication with deaf students in demonstration activities.

Classroom Discussion

Classroom discussion is not a frequent practice in occupational education, if the data obtained during this study is representative. Students reported that it was seldom employed. When it did occur, it was sometimes planned, sometimes spontaneous. Interview reports indicated that spontaneous discussions occurred more regularly than planned discussions and that, while deaf students remained in the group, little effort was made to include them as participants. Very few students reported participation in class discussions stating that teachers did nothing to encourage their involvement. This information was corroborated by teachers and pupil personnel workers who indicated that deaf students were not expected to take part in class discussions.

"Hands-on Activities"

The majority of time in the occupational education classroom is devoted to "hands-on" activity. Its use far exceeds that of any other learning experience. This activity is of equal importance to both hearing and deaf students with its emphasis on "learning by doing". However, for the deaf students, hands-on time was a period when individualization efforts could be maximized. Teachers could best accommodate this type of learning experience to the specific need of the deaf students through direct intervention by the teacher himself, peer teaching, or peer pairing in order to provide additional explanations of lecture material or to repeat demonstrations. Hands-on time seemed to provide the deaf students with greater opportunities to integrate course information with relevant practice. Small groups of students, usually composed of three or four participants, often worked together on projects and practice experiences. Instructors were able to work effectively with these small groups and provide for the needs of the deaf students at the same time.

The deaf students engaged in the same projects and work task experiences as the hearing students. Teachers, it was observed, made no special provisions to exempt the deaf students from these practice requirements. Some deaf students tended to engage in off-task activity, to wander around or talk with other students during hands-on sessions, but the extent of this behavior did not differ markedly from that of their hearing peers. Motivational and behavioral problems were most likely to be identified at these times. Deaf students varied widely in their ability to complete hands-on tasks with about as many deaf students completing their projects more quickly than hearing students as those who were slower.

During the hands-on activities, the deaf students were located in individual work areas or stations, or they were assigned a task in a small group setting. In many cases, the students, while performing a single task, were moving about or around the work area. Teacher-student communication, though more prevalent during hands-on time, was essentially of the same nature as interaction observed under other instructional conditions. Pointing, showing, and gesturing were the primary means utilized. Speech was used primarily to complement these strategies in the cases of students who were able to lip read well.

Emphasis on safety measures was particularly apparent during hands-on activity. However, the precautions, which included posters, signs, and oral reminders to put on safety glasses and helmets, were employed equally for the benefit of both hearing and deaf students. Safety in the laboratory, shop, or other work areas, in general, did not pose any particular problems. In a few instances, machines were labeled with printed warnings or instructions for deaf students. The number of these instances was, however, negligible in all locations, suggesting that special safety efforts for the benefit of deaf students was not considered an instructional problem in the courses to which they were admitted.

Support personnel were available in 51% of the observed hands-on activity sessions, and in these situations interpreters were the most common service provided.

Field Trips

In some courses, one or two field trips are planned each year. In all locations, deaf students participated in field trips without special accommodation except for the provision of an interpreter. Three field trips were observed. Each trip was characterized by a specific learning objective. For example, a floral design class made a trip to a botanical garden to identify different types of trees, shrubs, and flowers. On two of the field trips, the class was divided into small tour groups. Deaf students were grouped together since only one interpreter was available. Since the deaf students were in the same small group, there was considerable signing among them. In the one instance where the class toured as a group, the deaf students were positioned centrally to insure the visibility of the teacher and/or other tour guides. One class made use of peer pairing so that each deaf participant was accompanied by a hearing peer. In this case, the deaf students were paired with a hearing peer whose communication facility with the deaf had already been noted by the instructor.

Special travel and destination directions were provided for the deaf students in the event that they became disassociated with the group. Otherwise, only routine safety measures for all students were observed.

The Use of Visual Aids

Deaf students rely heavily on visual inputs. Therefore, it was of primary importance to identify the types of visual presentations used in the occupational education courses and the manner in which the visual aids had been adapted for the advantage of the deaf learner. Although the teachers tended to use a variety of visual aids (charts, graphs, diagrams), very few instances were noted where special efforts had been made to adapt the materials for deaf students. In one site, however, where films were the most frequently employed visual aid, captioned films were used. While the importance of handouts, the blackboard, and other visual aid devices is recognized, and their use encouraged, the intent of studying the use of visual aids in the occupational education classroom was to ascertain how extensively the teachers made use of films, the overhead projector, slides, filmstrips and other visual media which are common in the instructional methodology of deaf educators. Teachers of the deaf use these instructional forms regularly and deaf students are accustomed to various forms of visual presentation.

Other than films and filmstrips, handouts, the use of the blackboard, charts, and diagrams and the occasional use of the overhead projector, little use of visual media was reported or observed. The occupational education teachers were not accustomed to using these instructional methods with their regular classes and it appeared they did not find it necessary to increase the visual components of their repertoire of basic teaching methods to accommodate deaf learners. Deaf students, moreover, reported no dissatisfaction with the diminished use of visual presentations they encountered in occupational education courses. In general, then, classroom teachers tended to utilize the same visual techniques they would have employed if no deaf learners were enrolled in their classes.

Classroom Testing

Four classroom testing situations were observed. Teacher-student interactions in each case were somewhat different. In two situations, the teacher communicated with the entire class in a normal rate of speech. In another situation, the teacher gave directions separately to the hearing and deaf students. In the fourth situation, the teacher did not communicate directly with either group of students. Seating patterns for test-taking also varied widely. In one situation, the deaf students were seated in a group, in another they were placed out of the teacher's view and in the other two, they were placed either in the front or the rear of the classroom. Teachers, in two of the situations, positioned themselves in the back of the classroom while a third stood at the front of the room and the fourth circulated around the room. One teacher offered to provide help to a deaf student and permitted the deaf students to work on the test with imposing time limits. The deaf students proceeded more slowly than the hearing students. In general, it appeared that only one of the four teachers made any attempt to change the testing environment for the benefit of the deaf students or to provide any special help in taking the examination.

METHODS OF EVALUATION

Policies and practices for evaluating deaf and hearing students in the occupational education centers were identified in the first year of the study through intensive interviews with administrative (15) and instructional (14) personnel. Administrative-supervisory personnel were selected on the bases of their involvement with and knowledge of the cooperative program. Teaching personnel were stratified by school location and by type of occupational education course in which deaf students were enrolled.

First year interviews were geared to determine the philosophy of evaluation in each participating institution, the procedures and criteria employed by occupational education teachers in evaluating hearing and deaf students, and the differences, if any, in the procedures and criteria established for evaluating deaf and hearing students. In assessing, insofar as possible, the level of competence attained by the deaf students in comparison with their hearing peers, four areas were considered: content knowledge, performance quality, and personal behaviors.

In the second year, interviews were conducted with 31 occupational education teachers (7-8 per site) to further specify the evaluation procedures used, the frequency of their use, the specific assessment criteria applied and the grading system utilized in the occupational education programs.

Content Knowledge

A majority of the administrators and teachers (over 70% in each group) agreed that written tests administered separately or in combination with performance tests were the primary procedure for evaluating the knowledge of hearing students in occupational education classes. When reporting evaluation standards, both groups cited the use of a percentage or letter grade rather than specific performance criteria in judging student knowledge in content areas. Less agreement between administrators and instructors was evidenced regarding the procedures and criteria employed in assessing deaf students content knowledge. Most administrators (80%) reported that occupational education instructors used the same evaluation procedures and criteria to assess hearing and deaf students while only 36% of the occupational education teachers reported the use of similar procedures and criteria. The majority of instructors (57%) reported they employed different procedures and criteria for the evaluation of deaf students' content knowledge. However, these procedural differences, upon analysis, were found to be, in actuality, modifications of their standard procedures and criteria rather than essential differences. For example, some teachers reported allowing extra time for deaf students to complete tests, but none indicated during the first year interviews that the tests themselves were revised to make them more readable or comprehensible to the deaf. Others reported being more lenient in grading the deaf students or adding compensatory points to their test scores.

Second year probes to determine the specific evaluation procedures used indicated that 84% used written tests and quizzes, 48% used midterms and finals, 35% cited performance observations, 32% utilized practical tests or projects, and 10% employed oral questions. Other less frequently mentioned methods for assessing content knowledge included evaluation of student notebooks, worksheets and competency profiles.

The majority of teachers (76%) used tests on a weekly or quarterly basis and a few teachers (12%) used written tests on a monthly basis. In most cases, written tests provided students with the opportunity to accumulate points toward a final grade. In fact, 96% of the teachers interviewed cited this principle as the "criteria" employed with written forms of evaluation. The system used to evaluate students consisted of cumulative scores based on all instances of student performance subject to evaluation. Generally such total scores were transformed, for reporting purposes, to letter or percent grades.

Midterms and final examinations were employed less frequently than unit tests or quizzes. The majority of teachers reported using these forms of evaluation far less than performance observations. Over 70% used daily performance observations or practical tests and projects. In these instances, a majority of the teachers employed "subjective" criteria.

Slightly more than half (54%) of the occupational education instructors indicated some change in evaluations based on written test and quiz procedures for deaf students. These modifications included variation in the frequency of testing, the application of differential criteria to the deaf, and relaxation of grading standards. Others (46%) indicated that written tests were administered to the deaf without modification. Structural modifications in the tests themselves included rewriting tests for deaf students and using alternate methods of examination (e.g., completing diagrams, true-false tests).

Some teachers, substituted performance observations for test evidence to measure content knowledge; others "weighted" the deaf student's work performance more heavily than test results for grading purposes; still others added compensatory points to test scores in view of good work performance. Other modifications were also incorporated into the test administration procedures, such as providing sample questions in advance, employing an interpreter to improve the intelligibility of questions to deaf students, or reducing the number of test items to be completed by the deaf. Most teachers (69%) did not alter test schedules for deaf students. The criteria used in evaluating deaf students were modified by 50% of the instructors who reported boosting student scores or lowering cutoff points on the grading scale. A small percentage (8%) of instructors reported using completely different criteria for the deaf and hearing. Although modifications were made in the evaluation measures used, in the frequency of their administration, and in the criteria applied, a majority of the teachers used the same schoolwide grading system for reporting the progress of deaf and hearing students. This, of course, confounded the interpretability of grades assigned to deaf students and made it impossible to use assigned grades as a basis for comparisons between acheivements of deaf and hearing. Such modifications as those described in the basis for assigning grades simply obviate any grounds for assuming equivalence between identical grades assigned to deaf and hearing students.

A carpentry teacher provided two different copies of a written test--one used with hearing students, the other with deaf. The program coordinator had rewritten the test to adapt it to the deaf students' level of English language proficiency. As may be observed from the examples given below, these modifications introduced variations in vocabulary, grammatical structure, and semantic structure of the test items:

Hearing student item

List 5 types of hand saws used in this course and give 1 specific use for each one.

Deaf student item

Name 5 hand saws used in this class:

1 ______________ 4 ______________
2 ______________ 5 ______________
3 ______________

Tell one example for each hand saw

1 ______________ 4 ______________
2 ______________ 5 ______________
3 ______________

Hearing student item

If 25 shelves, each 2'x11" long, are to be made from a supply of 10 ft. boards, how many boards will be used?

Deaf student item

You must make 25 shelves. The shelves will each one measure 2'x11" long. You have many 10 ft. boards. How many boards do you need to make 25 shelves?

Another carpentry teacher used a carpentry textbook with an accompanying workbook. As the units in the text were completed, the students answered related questions in their workbook and completed short quizzes included in the text. The teacher counted the quizzes as 1/3 of the marking period grade.

A data processing teacher submitted a quiz containing a combination of items requesting written responses and items requiring the performance of work tasks. The written component was worth 20 points and the practical component worth 80 points. This same instructor indicated that quizzes designed to assess verbal knowledge and information in data processing were eliminated as an evaluation technique with deaf students. This teacher also maintained class progress charts with columns for marking each student's progress in regular projects, special projects, machine performances completed and quiz grades.

In a purely physical sense, some of the tests used in the evaluation of hearing and deaf students were correctly typed and well spaced. Others contained typographical errors, poor item arrangement, and a visually confusing manner of spacing items. Test materials contained sentence completion, true-false, multiple choice, and matching items. Some tests noted the values assigned the test items or groups of items; others did not.

Performance Quality and Quantity

Both administrators and teachers referred to a variety of procedures, including skill checklists, performance observations, and formal and informal performance tests as a means of assessing the quality of achievement by hearing and deaf students. Many teachers referred to "trade standards" as the primary criterion used to assess the quality of student performance. Three methods were identified for evaluating the quality of student performance: behavioral skills, products, and projects. Skill evaluations were based on teacher observation, log books, skill lists, skill ratings, skill tests, class tasks and joint teacher-student judgments of performance. In making these evaluations, approximately 40% of the teachers used admittedly subjective standards in judging the quality of a student's work. An additional 20% used subjective standards, but qualified the subjectivity of their judgments by stating that their criteria corresponded to trade or professional standards. A small number of teachers indicated that they evaluated performance relative to the assessment of the individual student's ability. As in the case of their evaluations of content knowledge, the teachers tended to employ summary scores (e.g., accumulated points, percentage equivalents) as a basis for grading student performance.

Teachers, in general, agreed on the importance of assessing performance products. Their quality was measured by examining the student's product (e.g., testing prepared food), checking the congruence between task instructions and methods students used to complete an assignment, or inspecting the result of a completed task. Teachers used product assessment about as frequently as they used performance evaluation. Once again, professional or trade standards were cited as the primary criteria, although many of those interviewed indicated that the student's ability to follow instructions also influenced evaluation judgments. Other important considerations included the time required to complete a task and the accuracy with which the task or product was completed. In a long range determination of performance quality, the number of completed projects was often taken into account. Teachers reported keeping a record of student's completed products for this purpose.

A substantial number (60%) of the staff cited a combination of skills and product performance as the means for evaluating the quality of student's work. In these cases evaluation was based on a composite of both bases of work assessment compared to trade and professional standards.

A printing teacher submitted two product evaluation checklists. Various product specifications were printed on the checklist and space was provided for rating the quality of the finished product. A maximum point value had been established for each product and points awarded for each product were logged. Near the bottom of the sheet was space for the "total points" earned and another space for the assigned grade. The specific criteria for evaluating the student's work were contained on the worksheet. In a machine shop worksheet, each dimension of each completed part is checked. If a dimension is not accurate, a point is deducted. If the tool does not work, more points are deducted. If the tool can be salvaged by reworking, some of the lost points can be restored.

A data processing instructor supplied copies of three different performance evaluations used in the course--a project, a speed test, and a skill test. A food services teacher used a "weekly lab report" which provided space for rating each student on their weekly job, uniform/classwork/personal hygiene, practical work, care and safety of tools, use of available time, and grade. Another food service teacher used a general performance evaluation twice a year. Students were rated in nine different performance categories as follows (note the general criterion used in considering each of the performance areas):

salads - cleaning, color, appearance, preparation, storage, dressings
entrees - methods, equipment usage, storage, eye appeal, taste
sandwiches - method, appearance, taste, storage
serving - speed, method, clean-up, portion control, attitude
sauces - method, texture, taste
sanitation - personal grooming, preparation of food, cleaning equipment
baking - preparation, method, portion control, appearance
safety - preparation of food, use of hand and stationary equipment, clean-up

Personal Characteristics and Work Behavior

Administrators and teachers agreed that subjective criteria, usually a teacher's judgment of a student's work traits, constituted the standard for evaluating the personal characteristics and work behaviors of hearing students. Direct observation of the student at work was the principal method noted. Teacher logs, check lists and worksheets were cited as sources of teacher information. Such factors as the student's attitude, willingness to take orders, punctuality, neatness, attendance, observance of classroom rules and safety measures are specific examples of the areas measured. As in the other areas of student performance, many teachers (38%) reported the application of subjective criteria to rate student characteristics and work behavior. Although a large majority of teachers (88%) reported using the same standards for judging hearing and deaf students, 9% were more strict in evaluating the deaf students since conformity to classroom rules and safety procedures was even more essential for deaf students.

An autobody teacher provided a competency sheet which contained a section for rating "attitudes-behavior traits." The sheet provided for a scale (unacceptable, needs improvement, acceptable, above average, outstanding) for rating students in nine areas: gets along with others, follows tasks through, shows initiative toward daily task, care of materials and equipment, responsibility, follows directions, behavior, able to adjust to new situation, potential for success in occupation.

Comparing the Performance of Deaf and Hearing Students

Administrators and teachers were asked if they believed deaf students were capable of the same quality of work as hearing students. Generally, administrators indicated that deaf and hearing students could not be distinguished in terms of the quality of performance in the classroom. In fact, when asked to elaborate, a third of the administrators reported that in some cases the deaf students produced better quality work than the hearing students. Teachers responses were less homogeneous. Some instructors (36%) identified noticeable differences between hearing and deaf students in terms of performance quality. Elaborations of their responses indicated that some believed deaf students had lower ability to perform than hearing students or took more time to produce work of the same quality. Others (21%) believed the deaf were capable of work of better quality than hearing students. The disparity between the responses given by administrators and instructors may indicate a lack of knowledge on the part of administrators with respect to the classroom performance of deaf students. Teachers, probably as a result of more direct contact, are more inclined to recognize and report potential or actual impediments to performance among the deaf students in their classrooms.

Personnel were also asked whether, compared to hearing students, the deaf differed in personal characteristics and behaviors. Over half of the administrators (60%) sampled tended to perceive deaf and hearing students as exhibiting similar social behaviors, enthusiasms, and needs. Others noted differences between the two groups of students, reporting that deaf students were more serious and motivated.

The occupational education teachers were less likely to perceive deaf and hearing students in the same manner. Only 35% of those interviewed reported that deaf students resembled hearing students in terms of personal behaviors. The majority of instructors (60%) indicated that deaf students demonstrated different patterns of behaviors when compared to hearing peers. Specifically, they perceived deaf students to be more sensitive to failure, less distracted in their own work but often unintentionally distracting to others (e.g., tapping pencils), less self-disciplined, less independent, more extreme in attendance patterns (best and worst in the class), more easily frustrated, often withdrawn or shy, less tolerant of teasing or ridicule, and more suspicious of others' communications.

Teachers were more inclined to cite differences in personal characteristics between deaf and hearing pupils and to provide more detailed and specific descriptions documenting their conclusions. A majority of the administrators believed that deaf students achieve at the same rate as hearing students. Another 33%, however, indicated that deaf students were often slower than hearing students due to communication difficulties. Occupational education instructors were more inclined (64%) to attribute a slower rate of learning to deaf students than to their hearing classmates. Most cited specific reading problems, difficulty in grasping new concepts, lack of background information and skills, lack of self-confidence, and a greater tendency to misunderstand instructors as reasons for learning lags. Several teachers had modified their instructional practices to accommodate the low reading levels of deaf students.

Summary

Interviews conducted with school personnel during the first year indicated that a variety of evaluation procedures were employed to assess student progress in the occupational education courses. In general, written tests were seen as the appropriate assessment tool for evaluating the student's content or substantive knowledge. In contrast, most personnel were inclined to view direct observation of the student's work as the best means for evaluating the quality and quantity of performance. Similarly, direct observation of student behavior was perceived as a useful procedure for gathering information needed to assess the student's personal characteristics and behaviors.

Although most of the personnel interviewed during the first year were able to cite some of the evaluation methods used in the classroom, few were clear about the criteria or standards utilized in evaluations. In most cases, irrespective of the area of student progress to be evaluated, school personnel tended to report grading practices (i.e., methods for discriminating among students on a variety of evaluation standards or for reporting the results of an evaluation). At best, they were vague about defining the actual criteria or standards used for judging the student's progress or achievement. Many teachers were candid about the subjectivity of their evaluations. Others referred to the use of purportedly objective criteria, especially "trade standards", but were unable to articulate specific operational definitions of such standards.

In almost all evaluation areas administrators were less knowledgeable than teachers about the evaluation practices and criteria applied within the classroom. It would appear that the responsibility for student evaluation falls squarely on the instructor's shoulders. While it may be argued that the proper place for evaluation to occur is in the classroom, and those most able to conduct the assessments are instructors, one might challenge such a "laissez faire" system on the grounds that it could lack uniformity across classrooms and programs and be subject to instructor bias.

In view of the first year data, it was apparent that teachers were more likely to report modifications and changes in evaluation practices than administrators. By and large, administrators thought that the same methods which had been utilized with hearing students were appropriate with the deaf. On the other hand, teachers were more likely to report that different practices and standards were used with the deaf. Ostensibly, teachers were more realistic and knowledgeable about the types of assessment methods or criteria required for deaf students, given their close proximity and pedigogical relationships with these students.

However, in several cases (e.g., with respect to evaluation of the students' quality and quantity of performance) a substantial number of instructors also reported that the deaf were evaluated in the same manner as their hearing peers. Teachers reported modifications in assessment procedures for the deaf most often in reference to evaluation of sbustantive or content knowledge. Also, when modifications were cited, they seemed of "makeshift" quality, merely variants of the standard procedures used with hearing students (e.g., adding points to scores, allowing greater time for the completion of a project, etc.). Although the motives for such compensatory efforts to diminish the likelihood of subjecting the deaf students to discriminatory grading practices are laudable, their contribution either to certification of competency or to educationally meaningful formative evaluation is questionable.

These findings suggest that teachers have received little guidance and instead have been left to their own ingenuity in adapting evaluation practices for deaf students. While most instructors may be capable of engineering new methods, this represents a considerable burden for individual teachers. Rather, greater efficiency could be achieved, and many potential problems and barriers resolved or averted, if collective efforts among personnel were instituted to develop more effective and relevant evaluation practices for use with the deaf.

First-year findings also indicated that teachers and administrators differed widely in their perceptions of the similarities and differences among deaf and hearing students on variables related to classroom performance and achievement. For the most part, teachers were more likely to differentiate between deaf and hearing students on all classroom variables. One exception to this overall pattern was that teachers and administrators were inclined to report that differences between the two types of students, in mathematics achievement, if present, were of little consequence in the occupational education classroom. However, with respect to the other variables of interest, teachers were more likely to stress deficiencies and deficits in the learning histories of the deaf students compared to hearing classmates.

Thus, the first-year findings generated a need for further exploration and examination of the evaluation methods and criteria used in the cooperative educational programs. In particular, clarification regarding the actual methods employed, how they were applied with students of differing needs, their frequency of use, and the specific criteria utilized in judging progress and reporting outcomes was needed. It was anticipated that such an attempt to elaborate this aspect of the learning environment would help to clarify successful and needed modes of evaluation for mainstreamed education settings.

Focused inquiry during the second year revealed that the frequency of use for various forms of evaluation also differed with respect to the goal of evaluation. Most instructors reported that evaluations designed to assess the student's understanding of course content were conducted on a weekly or quarterly schedule.

In contrast, daily evaluation was the modal response in reference to methods for assessing quality of performance at occupational tasks. Evaluation schedules for performance quantity were at variance with both of the aforementioned routines. In this case the majority of teachers tended to conduct evaluations at a pace corresponding to the student's task completion rate.

First and second year interview findings indicated that written forms of evaluation (tests, quizzes) were most commonly utilized to asses student's knowledge of course content. In contrast, most teachers reported using direct observation to assess student quality and quantity of performance or classroom behavior.

It was apparent throughout the data from both years that the standards employed for student evaluation were poorly articulated or confused with arbitrary grading practices. In many cases, teachers referred to grading systems (e.g., methods for assigning points, grades, or percentage correct scores) to explain how they made decisions about the adequacy of student's classwork. This gave the impression that instructors saw these arbitrary gradations as somehow equivalent to a performance standard. This was a problem for teachers even during the second year interviews when they were specifically asked to articulate the criteria relevant to each area of evaluation. Interestingly, the grading systems which were reported by teachers tended to be highly similar, irrespective of evaluation purposes or methods.

The revision or modification of evaluation practices, as a result of the participation of deaf students in the classroom was not extensive according to teacher reports. This overall finding stands in contrast with first year data indicating that teachers were more inclined than administrators to report the need for differing methods and practices. As the data from both years show, only the evaluation methods used for assessing student's content knowledge were subject to frequent or extensive modifications.

When the reported evaluation practices are viewed in conjunction with the types of instructional strategies emphasized in the occupational education environment, a number of important implications can be noted. It would appear that opportunities for assessing student performance (quality or quantity) should be most available given that "hands-on" instruction consumes the largest proportion of class time on a daily basis. The parent-administrative emphasis on job skill acquisition, would seem to underscore the importance of such procedures. It would therefore seem imperative to have clearly defined, accessible, and relevant standards of evaluation available for use with these measures. Unfortunately, little evidence to support this contention is present in the data assembled during this study. Rather, the criteria used for evaluating student performance on occupational projects and tasks is seldom spelled out or operationalized, and is often highly subjective. Although the teacher's judgment may be an important variable in determining skill mastery, such judgments are not necessarily highly correlated with industry standards. It may be argued that the degree of match between teacher-imposed standards and those set by industry is dependent on a variety of variables associated with the teacher (e.g., amount and type of education, background, experience, exposure to industry standards). Instead, it would appear that criterion-referenced evaluation is needed, implemented in such a way as to maximize the degree of correspondence between curriculum objectives for the classroom and industry standards.

If the data reported can in any way be interpreted as an indication of the ways in which the occupational education environment has adapted or should be adjusted to the needs of deaf students, then the most convincing evidence is centered around means for transmitting and evaluating conceptual or content knowledge. Observational and interview data collected across two years of investigation indicate that the most extensive and frequently introduced modifications for the deaf in teaching or evaluation strategies tended to be associated with substantive learning at the knowledge and information levels. Teachers reported modification of lectures for deaf students more than any other instructional strategy, and observation of teaching strategies confirmed their claims. Instructor reports indicated that modifications in evaluation were most often required for the deaf in order to assess student's content knowledge. These two processes are linked in that one represents a primary means for transmitting content knowledge and the other represents the principle mechanism for assessing the extent to which such content has been learned or assimilated by the student. It stands to reason that if deaf students are disadvantaged during instruction, it will be reflected in less complimentary evaluations. However, the solution to the problem does not lie in grading practices that mask weaknesses--no matter how inequitable the circumstances responsible for those weaknesses may be. Logically, pursuing better methods for transmitting the conceptual components of an occupational education curriculum might lead to the introduction of more clearly defined and relevant assessment standards and help to eliminate post hoc equalization of grades.

IN-SERVICE TRAINING

At the time this study was initiated, the cooperative programs at the four sites had been established. In-service programs for occupational education staff had been conducted at various times in prior years. During the first year, interviews were conducted with 14 occupational education teachers, 18 pupil personnel workers in the occupational education centers and 8 pupil personnel workers in the schools for the deaf to obtain information concerning the types of in-service programs that had been offered and to ascertain what programs were currently in operation. In-service programs had been conducted at every location at one or more times in the history of the program. These programs had emphasized manual communication, mainly through sign classes, and topics dealing with the psychology of deafness. During the first year of the study, an in-service program in manual communication was being conducted at one of the four sites. No in-service programs were in operation at the other three.

Having identified the types of in-service provided in the earlier years of these programs, having sampled teacher and pupil personnel service worker indications of in-service need, and having established the personnel who were most informed about and involved with the provision of in-service training, interviews during the second year were restricted to the 6 people in the four sites who were most informed about existing problems and needs. These interviews focused primarily on the in-service programs offered in 1977-78.

The program coordinator at each site tended to be most involved with the planning and implementation of in-service courses. In-service programs were offered at three sites in 1977-78. At one site, the high school supervisor at the school for the deaf and the program coordinator served as instructors. At another site a program was developed for college credit and offered by the local community college. Sessions (1 1/2 hours) were conducted weekly or bi-weekly, during after-school hours, over an extended period of time, depending on teacher availability, interest and need.

The content of these courses varied greatly among the three sites. The program offered at the community college was an introductory sign language course. A second program, offered at one of the occupational education centers over a 6-month period included the following topics: basic vocabulary, sign and fingerspelling; strategies for teaching the deaf, including peer teaching; technical signs/ reverse interpreting; and issues in the employment of the deaf. At this site a second 12-week training program was offered which included instruction in fingerspelling, total communication, and American Sign Language.

The project coordinator at the third site offered an in-service course which focused on general and everyday signs that could be used in the laboratory or shop. Developed around a commercial text, the course emphasized communication techniques with additional topics on the psychology of deafness and issues pertaining to developing curriculum for deaf students.

A distinct need for in-service training was recognized and articulated by those who were charged with the responsibility for assessing in-service needs and providing for them. Communication methods were cited as the primary need, although it was generally recognized that teachers needed more help in exploring ways to teach the deaf learner. There was no evidence of any systematic assessment of teacher needs; and although three of the four sites had ongoing in-service programs, no systematically planned curriculum for in-service teacher education was found.

During the third year, only those people in each site who had major responsibilities for the in-service programs were contacted.

One site offered four courses during the 1978-79 year--three courses in communication skills and one in educational planning and program development.

Course 1

> "Serving Deaf Students in BOCES", a course meeting weekly for one hour throughout the year, was designed for occupational education teachers as a beginning course in communication. It covered rudimentary fingerspelling and sign language with an emphasis on the vocabulary of the occupational training classroom.

Course 2

> A short term (10 weeks), beginning course in fingerspelling and sign language.

Course 3

> An intermediate course in fingerspelling and sign language offered for 10 sessions (1-1/2 hours each) as a sequel to the beginning course.

Course 4

> A course was designed to help occupational education teachers with program planning and curriculum development for handicapped students. In 15 after school sessions, such topics as developing individualized education plans, constructing curriculum and intervention strategies, and making use of school resources were covered.

Two in-service courses were offered at another site. Both courses focused on communication methods (fingerspelling, sign, with some attention to the psychology of deafness). One course was offered by the local community college for credit (3 semester hours) and the other was offered at the occupational education center (non-credit).

A single, 8-week in-service course meeting two hours weekly was offered at a third site. This course, with an emphasis on communication in teaching deaf students, utilized films and discussion panels of deaf students and parents of deaf students. Beginning with descriptions of what it is like to be a deaf student, teachers were subsequently exposed to different techniques and methods for working with deaf learners. In providing teachers with an opportunity to interact with students and parents, they were able to extend their understandings of the attitudes and feelings of deaf students and to learn about the feelings and concerns of parents of the hearing impaired.

At the fourth site, a 1-1/2 day workshop for occupational education teachers was conducted at the beginning of the school year. Many of the teachers attending this workshop had never worked with deaf students. Four teachers from another occupational education center shared their experiences. Teachers had an opportunity to raise questions and concerns and to explore ideas and techniques which they could use in their classes. Two teachers were enrolled in a sign language course offered at a nearby community college.

Summary

There has been an increase in the in-service offerings between the first and the last year of this study. The major thrust of the courses offered is concerned with methods for communicating with deaf students. The emergence of new courses or units dealing with educational planning and program development is evidence of the need frequently expressed by some teachers for in-service work dealing with their everyday instructional problems in meeting the needs of deaf learners. Although no systematic efforts to identify the needs of teachers was identified, the fact that program coordinators are heavily involved both in day-to-day communication with classroom teachers and with the formulation of in-service courses may account for the new directions which are beginning to emerge.

The past and continuing emphasis on communication in the classroom, when viewed in relation to the actual methods used (as identified in this study), raises questions about the efficacy of short-term courses which deal mainly with fingerspelling and sign language. The fact that only a few teachers try to utilize sign lanaguage to any extent, and that a majority of them use pointing, gesturing and showing, indicates that teachers are having some difficulty applying their newly acquired communication skills in the instructional setting. Since acquisition of a reasonable level of fluency in using sign language takes considerable time and practice, longer term courses, such as the full year course being offered in 1978-79 at one of the sites, may be more appropriate and beneficial.

Since teachers are experiencing some difficulty in communicating with their deaf students, courses which help them improve or extend their teaching behaviors are desirable. Little use is being made of the overhead projector and other visual aids which could enhance the act of teaching and facilitate the learning process for deaf students. Sessions identifying and explaining how these aids could be utilized effectively in the education of the handicapped would provide classroom teachers with information which they could use in their classrooms immediately. Teachers who have been effective with these techniques could be encouraged to participate and provide leadership in these sessions. Sessions where teachers could share successful techniques offer opportunities for them to become more acquainted with a variety of "how to" endeavors which they can explore. Courses which help teachers cope with the practical classroom problems of a mainstream environment will be necessary if the intent of P.L. 94-142 is to be more fully and adequately implemented.

More specifically, teachers will need in-service help in understanding and implementing the notion of individualized educational planning. Although some gains in preparing the IEP's were noted in the cooperative programs that were examined in this study, the identification of handicapped learner needs, the preparation of the IEP, its instructional implementation, the assessment of outcomes, and the involvement of parents in all these different phases of program development are matters which will need much attention in the years ahead. Teacher attitudes toward the IEP, as well as teacher competencies in dealing with it, are only beginning to surface. Instructional concern, at present, revolves largely around student mastery of subject matter content. The overriding emphasis on substantive learning could be more properly placed in perspective with the social, emotional, self concept and vocational learning-maturation of students. Courses designed to help teachers understand and provide more regularly for these facets of human development are essential.

Thus far, in-service has been largely a "hit and miss" affair. This should not reflect on the efforts of the institutions which were a part of this study.

Rather, it is a mark of our development in understanding and dealing with the problems of mainstreaming students. We are only beginning to sense the developmental needs of handicapped learners and to learn how to provide for them. Learning how to provide systematic service to teachers who work with the handicapped in the regular environment of the school is a matter of immediate necessity. Effective in-service programs can be constructed, using as guidelines the experiences of institutions that have already been engaged, in however limited fashion, in the process of attempting to serve professional staff needs. Such information supplemented by a survey of teacher concerns and problems, can provide a base from which an in-service effort can be mounted. Feedback of a formal and informal nature can be used to further develop, extend, and improve in-service training programs. Even more importantly, the in-service program should be the vehicle from which continual program adjustment and change can be regulated. As the concept of mainstreaming is implemented, teacher needs and problems can be served through in-service. As teachers provide feedback on its effectiveness and ineffectiveness, it can be revised. As the instructional program improves in its ability to serve the handicapped its personnel will experience new needs which must, in turn, be fed into and accommodated by the in-service machinery.

The in-service activities at the four research sites in this study and the experiences which they reveal are evidence of the magnitude of the task which is ahead for all schools. Institutions, which are presently only beginning to comply with the mandates of P.L. 94-142 can learn from the experiences of the schools in this study whose history of involvement with mainstreaming offers access to a variety of highly instructive considerations regarding the educational integration of handicapped youngsters.

SECTION VIII

KNOWLEDGE AND ATTITUDES TOWARD DEAFNESS IN THE OCCUPATIONAL SETTING

A matter of great concern both to special educators and to educators responsible for adapting the regular school environment to the handicapped is the establishment of a climate of acceptance that is truly a hospitable environment for learning and maturation of the handicapped and non-handicapped alike. In this study three important situational factors affecting the experience in the occupational education environment were investigated: (1) familiarity with the nature and impact of the handicapping condition, (2) prevailing attitudes toward handicap itself, and (3) attitudes toward associating with the disabled. The first goal was to assess the familiarity of occupational educators engaged in the mainstream instruction of the deaf with the disability of deafness itself and with the characteristics of deaf people. The second purpose was to investigate attitudes of both educators and hearing students at the occupational training centers toward the deaf in general and toward their participation in regular course offerings at these centers. Finally, the acceptance accorded to the deaf by educators and non-handicapped students in the social context of daily life was considered. Data on the first two objectives were collected during the fall semesters in 1976 and 1977, and on the third objective during the fall semesters in 1977 and 1978.

KNOWLEDGE OF DEAFNESS

In the first year of the investigation a Knowledge of Deafness Test (KDT) was administered to the entire population of occupational education administrators, PPS staff and instructors (N=146) who shared, in some way, direct responsibility for integrating 84 deaf students into the regular instructional programs of the four occupational training centers. The KDT was also administered to a sample of 98 deaf educators at the four cooperating schools for the deaf, in order to obtain comparison data indicative of knowledge and information levels among educators with training and experience in the field of deafness. In the fall of 1977 the test was readministered to 50% random samples (70 occupational educators and 41 deaf educators) of 1976 respondents who remained available for retesting in 1977. The purpose of this follow-up was primarily to assess the stability over time of individual and group performances.

The Knowledge of Deafness Test is a multiple choice test, containing items adapted for this project from two other instruments, the General Information and Knowledge Test (Weatherman and Johnson, 1972) and The Impact of Deafness Test (Avery). Item content is topically diverse and designed to extend over a wide range of item difficulty. Subject matter covered by the test includes such areas as demographic features of the deaf population, etiology of deafness, educational experience and achievement of the deaf, language development, communication and sign language. The 1976 version contained 32 items. One item was dropped from the 1977 version because it was found in the analysis of 1976 item data to have a negative discrimination index.

The purpose of this instrument is not to assess the technical competence one would expect to find in the repertoire of the specialist in deaf education. It is designed, rather, to survey both the breadth and level of background data about deafness and deaf people that an interested observer might acquire (1) through experiential contact with the deaf, (2) through alertness to spontaneously encountered sources of information (e.g., public media), and (3) through professional association with specialists in the field. It is the kind of information readily available to specialists, both by training and by association with deaf people but it is not the unique stock-in-trade of any particular specialty within deaf education. Interest in the extent of such knowledge among occupational educators responsible for mainstreaming deaf students was prompted by two assumptions:

(1) That such knowledge contributes, at least partially, to a sense of unity and to community of purpose among those engaged in providing educational services to the deaf;

(2) And that such knowledge provides a useful basis for appreciating learning difficulties experienced by the deaf, for understanding behavioral concomitants of deafness, and for alleviating apprehension that might otherwise accompany contacts with deaf persons.

In order to establish the content validity of the KDT as a measure of general background knowledge, it was submitted for review to staff members of the Office of Professional Development, National Technical Institute for the Deaf (NTID), at the Rochester Institute of Technology, Rochester, New York. These individuals are responsible for providing a general orientation to deafness for new-staff members who have no previous professional training or experience in deaf education. The test administered in this study was a version of the KDT revised according to recommendations of the NTID new-staff trainers.

Item analyses performed on KDT data in both years produced generally encouraging results. Item difficulties (.08 to .89 in 1976; .10 to .98 in 1977) indicate accomplishment of the objective to produce a wide range test. Moreover, average item difficulties in both years (.58 in 1976 and .60 in 1977) were only slightly below the optimal average difficulty of .64 for a four option, 32-item multiple choice test. Item discrimination indices, with the exception of a single item in each year, were positive, and, with very few exceptions, encouragingly large. Split-half reliabilities in 1976 and 1977 were .67 and .64 respectively. While these values are not very large, it must be remembered that the test intentionally covers a very wide range of topical content. For a nonhomogeneous instrument the observed split-half reliabilities are quite reasonable. More informative is the stability coefficient (.77) based on the performance of those tested in both years. Considering the length of the test-retest interval, evidence for the adequacy of stability is, in the authors' view, quite satisfactory.

Table VIII-1 reports by type of school (occupational education centers and schools for the deaf) and by job classification (administrators, pupil personnel services staff, instructors) the KDT means, standard deviations, and number of subjects tested in fall, 1976. Table VIII-2 reports the same data for the 1977 retest sample. Tests of statistical significance among observed means were not conducted, since observed values are parameters (free of sampling error) for the various subject populations, pooled within job classification for schools for the deaf and for occupational education.

The most notable feature of the differences observed among groups tested is the magnitude of the differences between occupational education staff and staff affiliated with the schools for the deaf. As expected, the superiority of performance by professional staff at the schools for the deaf (relative to observed variance in the score distributions) was substantial, both generally and within each personnel category. Within either type of school, differences among personnel categories were relatively small. It is interesting to note, however, that at the schools for the deaf, group differences on the KDT are consistent with group differences in opportunity (i.e., breadth and length of professional experience) for familiarization with the characteristics of the deaf population. Among the occupational education groups, on the other hand, performance by pupil personnel services (PPS) staff exceeded that of both administrators and instructors. Included in this PPS group, however, were individuals trained and experienced in the field of deaf education. They were employed for the specific

Table VIII - 1

Knowledge of Deafness Test (Fall, 1976): Means (M), standard deviations (S) and group size (N) of professional groups tested at four schools for the deaf and four BOCES occupational centers.

Groups	Schools for the Deaf			Occupational Centers		
	M	S	N	M	S	N
Administrative/ Supervisory Staff	22.94	2.65	18	16.46	3.65	24
Pupil Personnel Services Staff	22.69	2.05	26	18.56	4.15	18
Instructional Staff -All	20.74	2.43	54	15.65	3.54	101
-Teaching Deaf in 1976	20.74	2.43	54	16.25	3.44	53
-Not Teaching Deaf in 1976	-----	---	--	15.00	3.57	48
All Staff	21.66	2.57	98	16.21	3.74	146

Table VIII - 2

Knowledge of Deafness Test (Fall, 1977): Means (M), standard deviations (S) and group size (N) of professional groups tested at four schools for the deaf and four BOCES occupational centers.

Groups	Schools for the Deaf			Occupational Centers		
	M	S	N	M	S	N
Administrative/ Supervisory Staff	24.86	1.46	7	14.70	3.16	10
Pupil Personnel Services Staff	22.40	4.77	10	20.30	5.19	10
Instructional Staff -All	22.29	2.07	24	15.54	3.99	50
-Teaching Deaf in 1977	22.29	2.07	24	15.35	2.92	23
-Not Teaching Deaf in 1977	-----	---	--	15.70	4.83	27
All Staff	22.76	2.97	41	16.10	4.38	70

purpose of coordinating relations between cooperating schools in matters pertaining to mainstreaming deaf students. When these coordinators' scores (N = 4; KDT mean = 23.78) were removed from the score distribution, the KDT mean of the remaining occupational education PPS staff was greatly diminished (N = 14; KDT mean = 17.07). Note, also, that occupational education instructors may be divided into two subgroups, teachers who had deaf students enrolled in their courses at the time of testing and those who did not. The mean for teachers actively engaged in occupational instruction of deaf students was also negligibly different from the other staff groups. In other words, occupational education personnel did not exhibit the systematic variation in performance observed among different types of deaf educators, and their performance as a whole is substantially below that of deaf educators. This suggests a relative deficiency among occupational education staff, independent of employment classification, in professionally advantageous background knowledge about characteristics of their mainstreamed students. The kind of knowledge in question is the sort that one might ordinarily acquire unsystematically through casual encounter with informed sources. At the same time, it is information upon which understanding and a sense of confidence in interpersonal contacts with such students may be based. It is also the kind of knowledge which can be easily organized, communicated, and acquired through formal instruction. This kind of information would seem to be important subject matter for systematic in-service instruction of regular classroom teachers in preparation for the enrollment of handicapped students in their classes. It does not seem unreasonable to expect that these findings could be readily replicated among regular educators in relation to knowledge of disability generally. There is no reason to believe that lack of knowledge, misinformation, and stereotypes of the sort encountered here would be reserved uniquely to information regarding deafness. Although broad generalizations from such data are not warranted, the evidence here is a specific example of confirmation that a problem exists and should be more extensively investigated.

ATTITUDES TOWARD THE DEAF

Attitudes of those with whom the handicapped are associated in the mainstream environment were also investigated. In the fall of 1976, the first year of the study, an instrument entitled the Attributes of Deafness Inventory (ADI) was administered to the same population of occupational education administrators, pupil personnel services staff (PPS), and instructors who completed the KDT (N = 137). In addition, it was administered to a group of hearing classmates (N = 68) of deaf students. Non-handicapped students were matched as closely as possible to the deaf students on the variables of sex, course of study, length of attendance at the occupational education center, and anticipated year of graduation. It should be noted that in the absence of randomization, these hearing students are not a representative sample of the hearing population at the centers; nor were they intended to be. Instead, systematic efforts were made to select close associates of the deaf, because the peer relationship of the deaf and hearing students was deemed critical. The study was concerned specifically with the attitudes of hearing students whose classroom experience directly involved the participation of deaf students. Use of statistical inference to evaluate comparisons among groups of respondents was not planned. Nor was generalization of findings to the occupational education student population at large intended. Comparisons of interest to the investigators were quite specific, i.e., attitudinal differences among precisely those groups having contact with or responsibility for deaf students at the occupational education centers. In 1977, the second year of the investigation, the same instrument was readministered again to staff, (N = 169) and hearing students (M = 34). The purpose on this occasion was to test the replicability of the first year's findings and to evaluate the stability of individual ADI performance for those respondents tested in both years.

The size of groups tested in 1977 differ from those tested in 1976 for several reasons. One school for the deaf reorganized its high school program, extending it from four to five years with a one-year moratorium on new admissions to BOCES. This reduced both the total number of mainstreamed deaf students, the number of occupational education instructors teaching the deaf, and the number of hearing students taking classes with the deaf in 1977-1978. In 1977 the opportunity presented itself to test a larger number of teachers who were not currently engaged in teaching deaf students.

Also in the second year, a new section (an experimental version of a social distance scale entitled the Personal Contact Scale) was appended to the ADI and administered to all respondents. The Personal Contact Scale was readministered in the fall of 1978 to evaluate stability of performance over time and to evaluate its relationship with the ADI measure.

The 1976 version of the Attributes of Deafness Inventory (ADI) was a 36-item instrument containing statements representing stereotypic concepts attributable to deafness and deaf persons. Respondents were required to indicate their reaction to each statement on a four-point bipolar scale (A = strongly agree, a = mildly agree, d = mildly disagree, D = strongly disagree). Items included both favorable and unfavorable statements, and responses were assigned values from 1 (strongly positive or favorable) to 4 (strongly negative or unfavorable).

The original ADI was composed of two separate subscales. The first 25 items (Scale 1) were adapted from the Attitudes to Deafness Scale (Cowen et al., 1967), by permission of the principal author. Scale 1 leaves item content of the original instrument substantially intact. Item revision was limited to adjusting vocabulary content to avoid reading difficulties which the original version might otherwise have presented for hearing students. The content of the items is dominated by stereotypic generalizations regarding both social skills and socially relevant manifestations of personality development and personal adjustment. The second subscale (Scale II) includes 11 items, similar in orientation to Scale I, but specifically focused on the occupational education environment and employment-related situations. The two subscales are scored separately in accordance with the procedure described above, yielding a separate score for each scale.

Table VIII-3 reports by year (1976 and 1977) the means, standard deviations, and size of groups on the ADI, Scale I, for occupational education staff groups and students. Table VIII-4 provides the same information for Scale II. Note that in both tables teachers are divided into groups--those teaching deaf students at the time of testing (participants) and those who had taught deaf students in previous years (nonparticipants). Inspection of the results indicates that, on the average, all groups exhibit moderately favorable attitudes toward the deaf on both subscales, falling roughly between the midpoint of the moderately favorable interval and its lower (more favorable) boundary.* On both scales in both years administrators and PPS staff displayed, on the average, more positive attitudes toward the deaf than either the hearing students or instructors. And in both years instructors were more favorably disposed toward the deaf on Scale I than hearing students.

Relative to the range of possible scores on both ADI scales raw-score

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*For Scale I (the 25 Cowen items) score intervals are 25-37.5 = strongly favorable, 37.6-62.5 = moderately favorable, 62.6-87.5 = moderately unfavorable, 87.6-100 = strongly unfavorable. For Scale II (11 BOCES-oriented items) score intervals corresponding to the same attitudinal categories are 11-16.5, 16.6-27.5, 27.6-38.5, and 38.6-44 respectively.

Table VIII - 3

Attributes of Deafness Inventory - Scale 1: Means (M), standard deviations (S) and group size (N) of staff and student groups at four occupational education centers for the years 1976 and 1977.

Groups	1976			1977		
	M	S	N	M	S	N
Administrative/ Supervisory Staff	41.29	8.08	24	42.08	11.75	13
Pupil Personnel Services Staff	42.64	7.51	14	41.89	7.46	18
Instructional Staff -Participant	44.46	9.83	37	48.47	10.21	38
-Nonparticipant	47.00	10.29	27	46.27	9.72	52
-Total*	46.30	9.95	99	46.30	9.99	138
Hearing Students	52.00	11.21	56	52.35	9.78	34

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* Includes 35 teachers in 1976 and 48 teachers in 1977 who have had no past or present experience in teaching deaf students.

Table VIII - 4

Attributes of Deafness Inventory: - Scale II: Means (M), standard deviations (S), and group size (N) of staff and student groups at four occupational education centers for the years 1976 and 1977.

Groups	1976			1977		
	M	S	N	M	S	N
Administrative/ Supervisory Staff	17.67	3.73	24	16.62	4.33	13
Pupil Personnel Services Staff	16.07	3.20	14	17.61	3.50	18
Instructional Staff -Participant	18.89	4.62	37	21.26	5.18	38
-Nonparticipant	19.54	4.24	26	20.46	4.95	50
-Total*	20.14	5.54	96	20.71	5.20	130
Hearing Students	20.34	5.21	67	19.26	5.05	34

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*Includes 33 teachers in 1976 and 42 teachers in 1977 who have no past or present experience in teaching deaf students.

differences among group means do not appear large. Relative to variability (i.e., standard deviations) within groups, however, observed mean differences take on a more interesting appearance. Within-groups variability is sufficiently small, relative to variation among groups, that measurement error alone is a highly improbable source of observed mean differences. Further evidence for this conclusion is given by the rank differences correlation coefficients between the distributions of group means on Scales I and II and on the pair of social distance scales.

These correlations (cf. Table VIII-5 reflect the relative consistency, across scales and over time, of group means for administrators, PPS staff, current instructors of the deaf, past instructors of the deaf, and hearing students associated with the deaf at BOCES. The extent to which the rank-order of group means was preserved between scales and occasions suggests, in spite of the narrow range of observed differences, that these groups do systematically differ by degree in the favorableness of their disposition toward the deaf.

In addition to correlation associated with between-groups variation, correlation associated with individual differences, among occupational education staff independent of specific job classifications, was also examined. Table VIII-6 reports Pearson product-moment correlations for ADI Scales I and II in the years 1976 and 1977, and for the Personal Contact Scales (Forms I and II) administered in 1977. Student data were not included in these computations because the membership of the hearing-student samples was not constant over the two-year period, and because the extremeness of student scores on Scale I could spuriously suggest the existence of stronger relationships than actually exist within staff groups. These correlations indicate that the ADI is considerably less powerful in its

Table VIII - 5

Rank differences correlation coefficients among distributions of BOCES group means (N = 5) on Scales I and II of the ADI (1976-1977) and Personal Contact Scales I and II (1977).

	ADI Scale I		ADI Scale II		PCS I	PCS II
	1976	1977	1976	1977	1977	1977
ADI Scale I 1976	1.00	.80	.90	.60	.60	.70
1977	.80	1.00	.90	.60	.90	.80
ADI Scale II 1976	.90	.90	1.00	.50	.80	.60
1977	.60	.60	.50	1.00	.80	.80
SD Scale I 1977	.60	.90	.80	.80	1.00	.90
SD Scale II 1977	.70	.80	.60	.80	.90	1.00

Table VIII - 6

Pearson product-moment correlation coefficients among ADI Scales I and II (1976, 1977) and Personal Contact (PCS) Scales I and II (1977) for all staff respondents at four occupational education centers (N = number of cases).

	ADI Scale I		ADI Scale II		PCS I	PCS II
	1976	1977	1976	1977	1977	1977
ADI Scale I						
1976	1.00	.65 (N=93)	.45 (N=92)	.51 (N=90)	.31 (N=94)	.32 (N=94)
1977	.65 (N=93)	1.00	.39 (N=91)	.64 (N=164)	.43 (N=171)	.45 (N=169)
ADI Scale II						
1976	.45 (N=92)	.39 (N=91)	1.00	.66 (N=90)	.61 (N=92)	.57 (N=92)
1977	.51 (N=90)	.64 (N=164)	.66 (N=90)	1.00	.59 (N=163)	.56 (N=161)
SD Scale I						
1977	.31 (N=94)	.43 (N=171)	.61 (N=92)	.59 (N=163)	1.00	.76 (N=172)
SD Scale II						
1977	.32 (N=94)	.45 (N=169)	.57 (N=92)	.56 (N=161)	.76 (N=172)	1.00

ability to differentiate among individuals generally than among groups in the occupational centers. Nonetheless, the correlations are sufficiently large to suggest the relative stability of views measured by each scale and moderate association between scales.

THE SOCIAL DISTANCE SCALE (PCS)

The initial version of the Personal Contact Scale (PCS), administered with the ADI in 1977, contained 24 items describing hypothetical social interactions between the respondent and deaf persons. These items had been culled from a larger domain of items on the basis of empirical evidence derived from item analyses conducted earlier. The preliminary domain of 40 items was submitted to 50 raters, i.e., teachers attending summer courses at the University of Rochester in June, 1977. The raters were asked to rate the content of each item on a six-point scale for the degree of social intimacy it described between the respondent and a deaf person. From the item-ratings obtained a weight was derived for each item by simple scaling methods. Items were rank-ordered according to the weights derived from the item analysis. Pairs of items whose weights were most similar in magnitude were identified. And, finally, item-pairs whose combined weights exhibited the largest differences from all other pairs were selected for inclusion in the PCS. This produced a total of 24 items that were distributed in pairs over the entire range of rated intimacy levels. This resulted in two 12-item parallel forms designed to measure the perceived social distance of PCS respondents from deaf individuals.

The instrument was first administered to occupational education staff (administrators, PPS staff, and instructors) and to non-handicapped classmates of deaf students at the occupational education centers in fall, 1977. Preliminary item analyses indicated that two pairs of items possessed negative discrimination indices. In order to obtain score totals which afforded maximum discrimination among subjects these items were subsequently ignored and the PCS was scored as if it were composed of two forms containing ten items rather than 12, in either form. The version of the PCS used the following year (1978) completely eliminated the two defective item pairs and was adminstered as a 20-item instrument.

In 1977, the PCS was administered to all occupational education staff and hearing students at the centers who also took the ADI. Except for a relatively small number of unscorable answer sheets (due to incompleteness or failure to follow direction correctly) data were obtained for the same groups on both instruments. The readministration of the PCS in 1978 involved occupational educators only. Instead of the PCS, hearing students at the centers completed a new sociometric inventory developed to assess views regarding the socialization of deaf students in occupational education classes. That data is described elsewhere in the report (Section IX).

In 1977 the PCS was completed by 47 students and a total of 174 occupational education staff at the four centers participating in the study. These included 13 administrative/supervisory personnel, 17 PPS staff and 144 occupational education instructors. In 1978 the instrument was administered to 196 educators at the centers--17 administrators, 18 PPS staff and 161 occupational education teachers. The number of subjects in all three professional categories who completed the PCS on both occasions was 110. Table VIII-7 reports means and standard deviations and sample sizes (N) both of the 10-item alternate forms of the PCS by year and by type of respondent.

Items were scored in dichotomous fashion (0-1), so that the total score was increased by one point for each response favorable to social interaction with deaf.

Table VIII-7

Means (M), standard deviations (S) and sample size (N) for two forms (Forms I and II) of the Personal Contact Scale, reported by respondent group and by year.

Group	Form											
	I						II					
	1977			1978			1977			1978		
	M	S	N	M	S	N	M	S	N	M	S	N
Administrators/ Supervisors	9.23	1.48	13	8.71	1.05	17	9.77	.44	13	9.71	.59	17
PPS Staff	9.29	1.05	17	9.22	.94	18	9.94	.24	17	9.67	.59	18
Instructors	8.35	1.65	144	7.85	16.69	161	8.60	1.67	144	8.67	1.82	161
Students	8.02	1.85	47	----	-----	---	8.34	1.77	47	----	----	----

Maximum possible (most favorable) score on either form (I or II was a score of 10. The most obvious characteristic of the results observed in both years and in all groups was the operation of a "ceiling effect". In this respect the PCS suffered from a common defect of instruments designed to measure discriminatory attitudes toward socially disadvantaged groups like the handicapped. All groups expressed an exceptionally high level of acceptance or tolerance for involvement with deaf persons in social contexts. The lowest mean level of acceptance observed for any group was with two points of the maximum possible PCS score. In addition, Form II produced a consistently more favorable outcome than Form I, in amounts ranging from .32 (Students, 1977) to 1.00 (Administrator, 1978).

Although the PCS failed to satisfy reasonable requirements for reliably differentiating in absolute terms among individuals regarding the favorableness or unfavorableness of their attitudes toward associating with the deaf, the results are not wholly uninformative. Even within such a limited range of observed performance, relative differences among groups were noteworthy. On both forms of the instrument and in both years, groups of respondents consistently sorted themselves according to more or less favorable attitudes toward the deaf. Results, in fact, paralleled the findings obtained with the ADI. Administrators and PPS staff exhibited more positive reactions, relatively speaking, to association with deaf persons than did instructors or students. Correlational evidence further supports this interpretation. As reported in Table VIII-6 the Pearson product-moment correlation between PCS Forms I and II for 172 occupational education staff in 1977 was .76. In 1978, based on results observed for 197 staff members, the correlation was .53. Moreover, for hearing students enrolled in occupational courses with deaf students during the 1977-1978 school year the correlation between PCS Forms I and II was .79.

Discussion

The question, of course, arises whether group differences as small as those observed on the ADI and PCS, however dependable, are worthy of attention and interest. The answer to this question is, in part, associated with difficulties that surround the interpretation of global measures of attitude in general, and especially of attitudes toward deviance from normality. Conscious and explicit negativism in self reports of attitudes expressed toward disadvantaged groups is relatively rare, even where discriminatory behavior can be documented. It has been suggested that social desirability may be a potent factor in accounting for generally favorable responses to items expressly designed to assess attitudes toward the handicapped.

Other studies of attitudes toward the deaf have already evidenced a common tendency for the deaf to be evaluated in mildly positive terms (Schroedel & Schief, 1972; Emerton & Rothman, 1975). Whether this represents genuinely favorable feelings is difficult to affirm or deny. That it might result, in part, from normative sanctions against expressing ill-will toward victims of misfortune is both possible and probable. This suggests, unfortunately, the probable futility of attempting, through questionnaires or rating scales, to obtain unambiguous absolute measures of attitudes toward exceptional persons. However, it does not preclude developing measures sensitive to relative differences in attitude, in spite of danger from the confounding effect of response bias. Assessing differences among groups does not require removal of response bias from such self report data, as would be necessary to assess feeling levels as such. To detect the existence of reliable attitudinal differences among groups it is sufficient for the confounding effect of prospective bias to remain roughly constant over the groups, to be compared as long as it does not also overpower and mask existing differences from analytical view.

The very discovery, under present circumstances, of notable variation among groups eliminates masking as an explanation of ADI and PCS findings, since masking effects would (by definition) serve to diminish the emergence of observed differences. The question of the constancy of biasing effects, however, is more problematic. Direct empirical evidence for the neutrality of influences like social desirability is very difficult to adduce. It might be argued, for example, that observed differences are due to the differential impact of response bias itself rather than to attitudinal differences. In this regard, however, two potent and attractive considerations appear relevant.

The first is admittedly hypothetical, but nonetheless cogent. We live in a society that enforces emphatic normative sanctions against public expression of negative feeling toward others (especially disadvantaged others). Such sanctions are imposed even on the very young and remain in force throughout life. This strengthens the likelihood that by adolescence, if not before, a youth is socialized in this respect to much the same degree as adult members of society--and no less likely to produce the "socially acceptable" response.

The second reason is more compelling. It is based on the deductive argument that response bias reflecting common societal norms cannot spuriously create the appearance of attitudinal differences. By definition, such norms exist to inhibit socially deviant response. Consequently the associated response bias would tend to repress rather than promote the appearance of attitudinal variation. When and if, therefore, group differences in expressed attitude are found it is reasonable to attribute them

(1) directly to the existence of such differences:

(2) or, indirectly, to the failure of the presumed bias to mask the differences.

Since the magnitude of response bias' effects, if present at all, is unknown, observed differences would be most properly interpreted as distinguishing groups hierarchically on an ordinal scale of expressed attitude. The limitations imposed by these considerations obviously necessitate caution in attempts to measure attitude and to interpret variation in attitude. Interpretations and implications must be viewed as suggestive and in need of such verification as the replication procedures employed in this study.

The most salient, and perhapd most interesting, feature of attitudinal variation among ADI and PCS respondent groups is its association with differences among them in the nature and extent of their actual contact with the deaf students. Occupational administrators' contacts with the handicapped student population are, for the most part, indirect and occasional. Their primary function is policy-oriented, regulatory, and supervisory, focusing on the integration and coordination of broadly defined organizational and institutional objectives. Their more positive attitudes toward the deaf are consistent with the nature of both their contact with mainstreamed students and their occupational role. Interview data collected for a wide variety of purposes in the course of this study confirms the tendency for administrators to adopt a broader perspective on educational issues, including mainstreaming, than the persons they govern. Attitudes evoked in administrators, being less influenced by direct individual interaction with the deaf, may be a somewhat detached reflection of principles that, in the abstract, guide mainstreaming efforts. In other words, such attitudes may be motivated in large measure by an idealism that is untested by some of the harsher realities of the classroom environment.

Equally positive expressions of attitude, on the other hand, were observed, of PPS staff, whose work does involve direct contact with the handicapped; and such contact, when it occurs, is more frequent and intense than administrators'.

In fact it is through such contact, usually one-to-one, that their essential function, individual intervention and advocacy, is fulfilled. By training, if not by temperament as well, PPS staff are generally assumed and encouraged to possess and promote a benevolent and empathetic view of their clientele.

Teachers and regular students, by contrast, are afforded neither the administrator's opportunity for philosophical detachment nor official reinforcement for cultivating positive personal regard for exceptional individuals in the school environment. They must interact daily with the mainstreamed student in the framework of the larger social context of shop or classroom. Within this context the social role of both teacher and student is traditionally defined by one's relation to the group rather than to individuals who comprise the group. The teacher's role is to instruct the class, and his relationship with individuals arises exclusively out of their membership in his class. The students' roles are characterized more by uniformity of status in relation both to the teacher and to one another than by individual differences among them. Notwithstanding a prevailing idealism favoring individualization in the classroom, there is little in the social structure of the classroom to induce a natural regard for the social anomaly, the exceptional person. For this reason, what is somewhat surprising is not that teachers and regular students display less favorable attitudes toward the deaf, but that, under the circumstances,they are as favorable as they seem. The continuous necessity of making special provisions for the adequacy of instruction for the mainstreamed students, the added effort required of all in the room to accommodate the integration of the handicapped person into the most ordinary activities, and the absence of positive, extrinsic reinforcement for doing so would readily account for observed teacher and peer differences in attitude from administrators and PPS staff. The major burden of mainstreaming falls on teachers and regular students. Corroborative evidence from interviews with teachers and hearing students and from extensive observation of classroom interactions does, however, support ADI and PCS indications that attitudes in the classroom are generally more favorable than unfavorable.

Negative reaction to the handicapped students does exist in the mainstream environment, however. To identify its focus and extent more specifically, item analyses were conducted separately on hearing-student and staff responses for each administration of the ADI. Response tendencies in each group were found to be highly consistent over time with respect to the items eliciting most unfavorable responses and with respect to the relative frequency of negative response. Moreover, both groups tended to produce the highest frequency of negative response to the same items. The only notable difference between students and professional staff was the students' generally higher frequency of unfavorable response. Very rarely, in fact, did students respond as favorably or more favorably to an item than the educators. It should also be noted that unfavorable responses elicited from both groups were overwhelmingly concentrated in the "mildly" unfavorable category. "Strongly" negative responses were relatively infrequent. For reporting purposes, however, their "mildly" and "strongly" negative reaction rates have been combined.

The content of many ADI items focused on impressions regarding the personal and social adjustment of the deaf. Both groups, in relatively large numbers, were inclined to view the deaf as emotionally volatile, defensive, overly dependent, and insecure. Forty to 45% of the occupational education staff and 50% to 60% of the hearing students responded in this manner. Though unfavorable ratings were less frequent on other aspects of adjustment, 25% to 50% of the students and 10% to 25% of staff rate the behavior of deaf persons as bizarre, withdrawn, depressed, and obsequious. In addition, approximately one-third of all respondents, staff and students alike, expressed some dissatisfaction with or reluctance about socializing with the deaf. Many also indicated that the presence of the deaf in their midst resulted in individual or group inconvenience. Difficulty created for the teacher was especially noteworthy. Almost 50% of staff were in "mild" agreement with the suggestion that the presence of the deaf was a hardship on instructors, and another 25% were in "strong" agreement. Finally, belief in the diminished intellectual capacity of deaf students is fairly common. It appears that about 35% of the students and 20% to 25% of the professional staff share the view that the abilities of the deaf are generally inferior to those of the hearing.

Three important facts emerge from the data regarding attitudes toward the deaf in the mainstream environment. To avoid misinterpretation and overemphasis of any particular facet of the evidence, it is improtant to consider each of these facts in relation to the others. Any of them, taken in isolation, could readily seem to support, rather emphatically, quite different biases or beliefs regarding the prevailing climate of opinion at the occupational training centers. It should be borne in mind, therefore, that they are not distinct and independent results, but three different approaches to summarizing precisely the same data.

First of all, we have observed that, on the average, attitudes expressed by various professional groups and by hearing students in the occupational training courses tend to be more favorable, and much more frequently favorable, than unfavorable, Second, although all groups surveyed in the study responded in a generally favorable way, they differed, nonetheless, in the degree of favorableness expressed toward the deaf. And finally, in spite of the fact that acceptance of the deaf may outweigh negative attitudes, substantial numbers of occupational educators and hearing students do express uncomplimentary judgments about the deaf. These findings suggest the conclusion that the occupational education centers offer to handicapped students an attitudinal climate that can be, with discriminating choice of associates, both hospitable and conducive to mainstreaming goals. However, there also appears to be little basis for complacency regarding endorsement for the integration of handicapped students in regular courses of study. Though unfavorable sentiment may not prevent the success of carefully orchestrated integration efforts, it might nonetheless impede seriously the range of opportunities open to the deaf, contribute to weakening their interest and motivation, and diminish their satisfaction with the mainstreaming arrangement.

Summary and Conclusions

There is obviously no simple solution to the problem of negative bias, however slight or severe, toward handicapped students in the regular school setting. One strategy, found in all cooperating programs, is to protect deaf students by limiting their course options to reasonably receptive situations. There may be no other realistic alternative to the temporary use of this particular expedient, since it does at least enhance the possibility of rapid and effective development of mainstream opportunities along lines of least resistance. As a permanently accepted basis for selective placement of students, however, it is highly unsatisfactory for two reasons. Accommodating capricious variation in staff and student adjustment to the handicapped limits artificially the school's mainstreaming capability. And even more importantly, if adopted as a policy regulating placement of the handicapped it circumvents a mainstreaming principle that has acquired the force of law -- the child's right to educational due process and equality of educational opportunity.

It seems especially important, therefore, that affirmative action be undertaken to extend and sustain acceptance, not only in principle but in general practice, of the handicapped in regular school settings. It appears particularly important to invoke such efforts with those on whom the greatest and most immediate demands are made. Much concern is expressed about the needs of the handicapped and about the importance of mainstreaming opportunities to their normal development. However, it must be recognized that the needs of others, both staff and students, also coexist in the mainstream environment. The outlook for ameliorating negative attitudes would not seem promising, if the needs and convenience of some are perceived to be in competition with the interests of others.

Where negative attitudes exist toward the disabled in the mainstream environment, they are not likely to improve either spontaneously or in response to direct appeals, however valid, to principles, to conscience, or to legal rights. Such appeals connote the existence of an adversary situation, implying discrimination and guilt on one hand with injury and innocence on the other. Impressions gathered through extensive interview and observation in the course of the project suggest that such considerations are related to attitude.

It is not the purpose of this report to detail unvalidated prescriptions or hypothetical solutions for altering negative attitudes or for reinforcing positive attitudes toward mainstreamed youngsters. However, when the dominance of social values in the unfavorable judgments expressed toward the deaf in the integrated environment are viewed in relation to the organizational, operating, and policy structures observed in these particular programs, one very attractive explanation appears worthy of further consideration. It seems quite possible that reported lack or loss of individual support for mainstreaming efforts may be associated in large measure with the perceived absence of positive incentives. Consideration might profitably be given to exploring locally practical possibilities of making explicit provision for such incentives. Appeal to incentives and reinforcers may seem to some to have the appearance of a crass, unprofessional appeal to selfish, personal interest. However, it might be well in this respect to recall the observation regarding differences in the expression of attitudes toward the deaf that the impact of mainstreaming is not conducive to philosophical detachment on the part of those most immediately and intensely affected by it. It is much less likely to be valued for its own sake than for tangible evidence of its value.

Depending on the circumstances, locally feasible and acceptable ways might be found to encourage belief in the importance of devoting energy to mainstreaming efforts. Examples of such inducements might include:

(1) Capitalizing on the personal support and influence of regular classroom teachers whose mainstreaming experience has been successful and satisfying;

(2) Visible support and public recognition of contributions to the achievement of mainstreamed students;

(3) Special work-load considerations that take into account the arduous demands of mainstream instruction;

(4) Increased access to special educational staff, support services, and other instructional resources;

(5) Provision of practical in-service experiences, particularly relevant to mainstreaming, which carry academic, certification, and/or salary credits;

(6) Guarantees of swift, individual, constructive, and unreproachful attention to difficulties encountered in the exercise of mainstreaming responsibilities;

(7) Promoting joint planning, shared responsibility, and mutually supportive delivery of instructional services by regular and special teachers.

These are ordinary things which might be attempted without extraordinary modification of existing arrangements. They refer, moreover, to _staff_ incentives. In the classroom itself equally practical, teacher-initiated incentives might be devised to attract the active acceptance of regular _students_. While acceptance and support by both regular students and line staff may not directly account for mainstreaming success, it may well be a necessary condition for success. The data on attrition seem to suggest the existence of a relationship between the favorableness of attitudes in various locations and the holding power of the mainstream programs.

SECTION IX

SOCIAL MILIEU

It may be argued that the conditions under which children develop social competence include both informative experiences and opportunities for participation with peers. Informative experiences, such as occasions for observing peer behavior, facilitate the acquisition of social knowledge and response information. Experiential involvement with peers provides young people with a context for translating response information into behavior as well as opportunities to learn about their own behavior and its effects of peers. Both components are essential for the development of social competence. The lack of either or both components, in terms of corresponding experiential equivalents, may be viewed as a detriment to children's social learning and development. Children who lack informative experiences, such as exposure to more competent peers, will be deprived of opportunities to broaden their social knowledge. Moreover, children who lack the opportunity for interaction and participation with peers will be deprived of the experiences needed to expand their skill repertoires and behavioral competence.

Barriers to informative experiences and participation with peers may be classified in terms of (1) situational or environmental constraints and (2) psychological-interpersonal constraints. Situational or environmental barriers include circumstances which prevent peer contact or result in a lack of proximity to peers. Barriers of this type prohibit both exposure and participation with peers. For example, children who reside in all adult neighborhoods or secluded rural areas may have limited out-of-school peer contacts. Methods of grouping children or structuring their academic and social experiences may also restrict opportunities for observing and interacting with peers.

Interpersonal and psychological constraints function primarily as barriers to interaction and participation with peers. Interpersonal constraints include barriers which are constructed and imposed by peers. Peer groups may vary in receptivity and permeability, ranging along a dimension of inclusion-exclusion. The extent to which children are included in the peer group directly affects their opportunities for participation and interaction within it. Children who are neglected or actively rejected by peers may become isolated from constructive participation within the peer group. Psychological constraints, in comparison, stem from the child's perceptions of self and others, and interfere with successful interpersonal interactions. Feelings of discomfort, anxiety or fearfulness in the company of peers may severely inhibit children's social interactions. Debilitating or negative attributes, ascribed to self or others, may also discourage involvement with peers. Handicapped children who view themselves as different may be less inclined to initiate interactions with "normal" peers. Similarly, children who perceive peers as hostile or rejecting may have difficulty establishing affiliative relationships in the peer culture.

It might be argued that interpersonal or psychological constraints, as compared to situational or environmental barriers, are not as detrimental to children's social learning and development. Presumably, children who come into contact with peers, but have limited opportunities for social interaction, may still profit by observing the social activity of others. However, recent research indicates that the consequences of limited peer interaction may also be severe. Evidence suggests that without active involvement with peers, children do not develop effective communication skills (Gottman, Gonso, & Russmussen, 1975); do not acquire knowledge about social skills and peer norms (Gottman et al., 1975; Ladd & Oden, in press); have difficulty regulating aggressive behaviors in social play (Patterson et al., 1967; Patterson & Cobb, 1971); and may not manifest appropriate social skills among peers (Furman, Rahe, & Hartup, in press). Also, children with limited opportunities to engage in peer interaction are more likely to be "at risk" for interpersonal difficulties in later life (Asher, Oden, & Gottman, 1977).

Circumstances which limit or deny contact and interaction with peers are probably temporarily or occasionally experienced by all children during childhood and adolescence. However, handicapped children, as compared to their "normal" counterparts, may face more pervasive and enduring obstacles. Formidable situational and environmental barriers are often created by educational practices and social policies requiring separate programs and services for normal and handicapped children. Segregated educational programs for the handicapped may limit exposure and interaction with normally developing peers. Disabled children may also encounter lasting interpersonal or psychological barriers which interfere with peer interaction. For instance, certain handicapping conditions (e.g., deafness, blindness) may impair interpersonal communication with peers. Moreover, a disability may have a stigmatizing effect, making handicapped children especially vunerable to interpersonal constraints such as peer rejection and exclusion. Aversive interpersonal experiences may also contribute to negative self-perceptions and self-imposed psychological barriers to peer involvement. Over time, barriers which prevent contacts and constructive interactions with normally developing peers may insulate handicapped children from many social conditions and experiences critical to "normal" socialization. As a result, the handicapped child's social learning and development may be substantially altered.

Before handicapped children can participate fully in more "normal" socializing experiences, many of the barriers which currently prohibit contact and interaction with normally developing children must be eliminated.

Generally, arguments in favor of integrated educational programs and services for the handicapped have been based on legal, moral-ethical, and psychological-educational considerations (e.g., see Bricker, 1978).

From a psychological-educational standpoint, the practice of providing social experiences with normally developing peers as a means of promoting the handicapped child's social development can be supported by the principles of social learning theory. Mainstreaming experiences, depending on how they are implemented, can provide handicapped children with opportunities for both contact and participation with non-disabled peers. Disabled children may profit from observing and subsequently imitating peer models who display normative social behaviors and slightly more advanced scholastic competencies. However, in educational practice, the concept of mainstreaming is often synonomous with physical integration (i.e., proximity to normal peers). Under such conditions, handicapped children may still face insurmountable interpersonal and psychological barriers which can deter or deny constructive interaction with normal peers. In fact, current evidence (e.g., see Gottlieb & Budoff, 1973; Goodman, Gottlieb, & Harrison, 1972) indicates that mainstreaming practices which consist of physical integration alone may result in classroom peer rejection or exclusion for the handicapped child. As conceived from a social learning perspective mainstreaming must consist of both physical and social integration. This means that in addition to physical integration, handicapped children must also be integrated into the mainstream of peer interaction. Ideally, to promote the social development of both disabled and non-disabled peers, the social environment should be conducive to cooperative interaction and friendships.

In view of these considerations, it was of interest to explore some of the social conditions and outcomes within the four cooperative educational programs in which deaf students were mainstreamed into secondary level occupational education classes with non-handicapped peers. Physical integration was a pre-existing condition in all four research sites.

Specifically, the purpose of this facet of the research was to describe and document both the social conditions under which deaf students were mainstreamed and the effects of mainstreaming on deaf students in terms of social-personal changes and outcomes. In relation to the conditions of mainstreaming, it was of interest to examine (1) the nature of the social climate (i.e., peer attitudes and acceptance) experienced by the mainstreamed deaf students; and (2) the types of social interactions which occurred between deaf and hearing peers in the integrated classrooms. Classroom social climate was assessed with a sociometric questionnaire. Peer's perceptions of the mainstreamed deaf students were profiled on four behavioral dimensions including: disruptive and attention-seeking; motivation and maturity; social ability; and considerateness. Observational methodology was employed to examine classroom social interactions. Interactions between deaf and hearing students were coded with respect to the kind of interaction engaged in, means of communication employed, and the participants' role in the interactions.

Relative to social-personal outcomes, changes in the deaf students' social behaviors, attitudes, and friendships as a result of their participation in the integrated programs were identified. Perceived changes in the deaf students' social adjustment and development were examined in yearly interviews with teachers, parents, and students.

These efforts illuminate some of the social conditions present within the integrated educational programs which may contribute to handicapped children's social learning and development. In light of social learning theory, social conditions conducive to both contact and constructive interaction with normally developing peers is related to positive social personal outcomes. Information helpful in determining the potential advantages and disadvantages of mainstreaming as a means of helping the handicapped learn and adapt to the social realities of "normal" life and working situations was obtained.

OVERVIEW OF MEASURES, SUBJECTS, AND PROCEDURES

Observational scheme. Classroom observation was employed to describe the social interactions between deaf and hearing classmates. Within the present scheme, an interaction was defined as pupil behavior directed toward another pupil and responded to in some way by the second pupil. Thus, an interaction was composed of an initiating behavior, a consequent response, and subsequent action-reaction sequences until the interchange was ended. Termination of an interaction was signaled when participant(s) left the location, turned their backs on each other, or failed to engage in conversation for an interval longer than 20 seconds.

Observations focused on three dimensions of pupil interactions (1) the nature of the interaction; (2) the student's role in the interaction; and (3) the means of communication used in the interaction. The nature of an interaction was coded as either social- or work-related. Work oriented interactions were defined as exchanges related to work tasks or assignments in the classroom (e.g., giving or receiving help, directions or information). Interactions having a social orientation included all non-academic interchanges (e.g., discussions about boyfriends, parties). The students' role in an interaction was coded as either initiator or target. In the context of an interaction, a pupil directing the initial or first behavior toward a peer or peers was seen as the initiator whereas the intended recipient or audience of this interaction was designated as the target. Finally, the categories verbal-manual or body language were used to classify the mode of communication employed in pupil interactions. The types of communication utilized by each participant in the interaction was recorded. Verbal-manual communications included speech, fingerspelling and sign language, or writing. Body language incorporated behaviors such as gestures, pointing, facial expressions, or dramatizations.

Sociometric scale. The peer rating scale (PRS), developed by Rubenstein, Fisher, and Iker (1975), was used to profile peer's perceptions of the mainstreamed deaf students. The scale, consisting of 37 items, was adopted for use with high school students during pilot research. Each scale item described a particular student characteristic or behavior (e.g., someone who fights a lot; someone who likes to have fun), and corresponded to one of four behavioral dimensions or factors, including: disruptive and attention seeking; motivation and maturity; social ability; and considerateness.

Social behavior, attitudes, and friendship interviews. Samples of teachers, parents and students were interviewed to identify perceived changes in the deaf students' social adjustment and development following their participation in the integrated classrooms. Interviews consisted of dichotomous (yes-no), scaled, and open-ended questions.

Interviews with instructional personnel were designed to gather information pertaining to the formation of classroom and out-of-school friendships between deaf and hearing students. Teachers, based on their observations of student interactions in the classroom, were asked to identify instances where hearing and deaf students established friendships or occasions where deaf students were invited by hearing students to visit their homes or attend their parties (or the reverse).

Interviews with parents of deaf students explored changes in social behavior and attitudes as well as classroom and out-of-school friendships attributed to the mainstreaming experience.

Student interviews also provided information about friendships between deaf and hearing classmates in the integrated programs.

SUBJECTS AND PROCEDURE

First year data collection. During the first year of the investigation, efforts were focused on developing observational and sociometric measures and implementing the first round of teacher, parent, and student interviews.

The observational and sociometric instruments were piloted at each of the four occupational education centers. Narrative observation was employed to document interactions between deaf and hearing peers in a variety of school settings (e.g., lunchrooms, hallways, and classrooms) during the fall and spring of the school year. These data were used to construct the observational categories and sampling scheme utilized during subsequent years. Pilot administrations of the Peer Rating Scale were used to adapt, refine, and examine the measure properties of the sociometric measure.

Interviews probing the deaf students' social behavior, attitudes, and friendships were instituted with randomly selected samples of teachers, parents, and students during the spring semester of the school year. The instructor sample consisted of 33 teachers (14 from schools for the deaf and 19 from occupational centers), or roughly one-third of the instructional personnel working with mainstreamed deaf students. Approximately one-third (n = 26) of the parents of mainstreamed deaf students were also interviewed at this time. The student sample included 37 deaf and 31 hearing pupils completing their senior year in the occupational programs.

Second year data collection. The second year of the investigation was expanded to include administration of the fully developed observational and sociometric measures as well as the second round of teacher, parent, and student interviews.

Classroom social interactions were the focus of observation. First year data indicated that most of the social exchanges between deaf and hearing students occurred in the classroom as opposed to other school settings. A random sample of 32 classrooms was observed over the course of the school year, 16 during the fall term and 16 during the spring term. Four classrooms from each occupational education center were observed each term. The sample of classrooms was restricted to those containing mainstreamed deaf students and observations were limited to interactions involving deaf pupils. Due to the small number of mainstreamed students at the four research sites, deaf pupils were observed simultaneously in each classroom.

Observations were conducted by one of three trained observers during 1-hour intervals in each classroom. To conduct the observations, observers first coded the identity (i.e., deaf or hearing) and sex of each participant as well as their role in the interaction. Next, the mode of communication employed by each participant was recorded. After these steps were completed, the interaction was classified as either social- or work-related. Prior to data collection, the observers introduced themselves to each classroom and explained the purpose of their presence. Observations were then conducted in an unobtrusive manner.

The Peer Rating Scale was group-administered to a random sample of 24 occupational education classrooms (6 from each research site) in which deaf students had been mainstreamed. The measure was administered in the spring of the school year to insure sufficient time for classmates to become acquainted. Each class member received a copy of the scale and a class roster containing the names of students who regularly participated in class activities. Students were permitted to nominate absent classmates and base their judgments on both in- and out-of-class peer behavior. No one was allowed to nominate students who were not regular class members.

Interviews investigating social factors were conducted with a second sample of 23 parents and 69 senior students during the spring semester. Thirty-six deaf pupils were included in the student sample. Interviews with instructors were omitted because first year data revealed that most teachers were unable to provide specific information about student's social relationships.

Third year data collection. The schedule and procedures utilized to administer the observational and sociometric measures during the second year of data collection were replicated during the final year of the study.

Student social interaction was observed in a total of 24 classrooms, 3 per site in the fall and 3 per site in the spring semester of the school year. The PRS was administered during the spring semester to 13 classrooms (2-4 per site).

Observation of Classroom Interaction (1977-78)

A total of 145 social interactions between deaf and hearing peers were recorded during the fall semester of the school year. Interactions were summed across classrooms and research sites at each time of measurement. This data was then examined for differences in types of social interactions, student roles, and communication modes. The number of interactions in each classroom ranged from 1 to 20. The majority of the interactions observed involved work-related themes. Approximately 60% of the recorded interactions were coded as "work-related" and the remaining 40% were classified as "social" in orientation.

In most student interactions, deaf students assumed the initiator's role. Of the total number of recorded interactions, 75% were initiated by deaf students whereas only 25% were started by hearing students. Interactions initiated by deaf students were directed toward other deaf pupils (44%), hearing classmates (44%), and groups of deaf and hearing peers (10%).

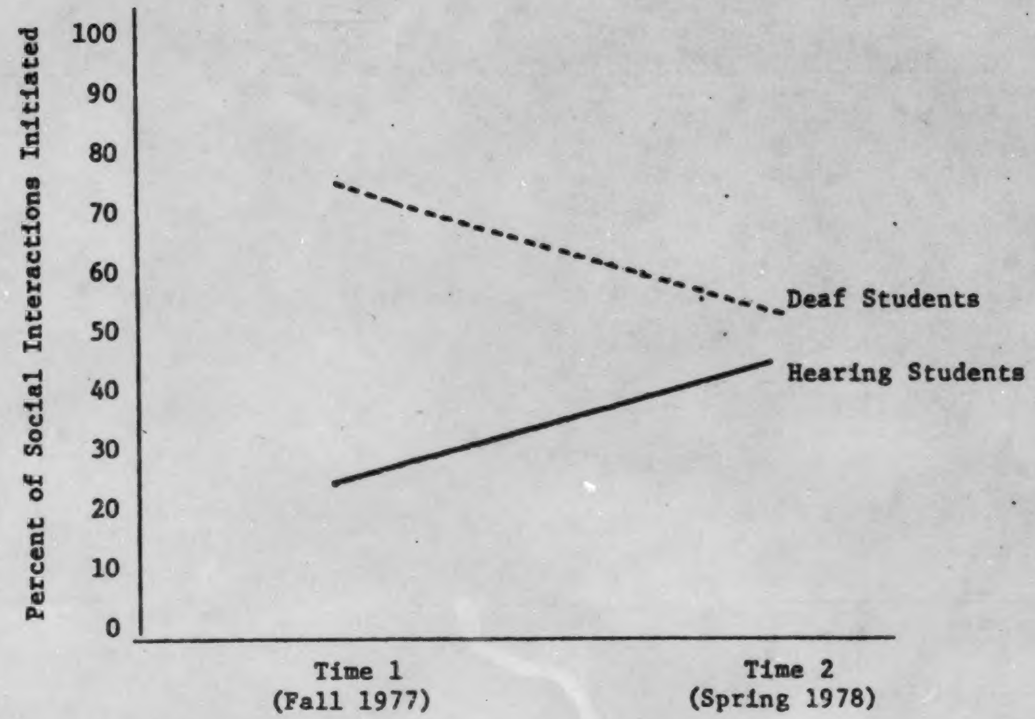
Deaf students were responsible for most of the interactions during the initial months of school distributing them equally among hearing and non-hearing classmates.

The communicative behaviors employed by each student during interaction sequences were coded with a non-mutually exclusive category scheme. This type of scheme was needed to document different forms of communication enacted simultaneously (e.g., talking and gesturing concurrently). The fall data contained a total of 659 inter-student communications stemming from the 145 interpersonal interactions observed. Because the majority of documented interactions involved deaf pupils, the number of verbal-manual or body language communications attributed to deaf students (77%) far exceeded those recorded for hearing students (23%). Furthermore, the largest share of observed communications were coded as body language (60%) as opposed to verbal-manual modes (40%). Among the deaf, sign language was the most frequently employed verbal-manual communication whereas hearing students tended to use "slowed speech" most often. Smiling was the most common form of body language exhibited by hearing students. Deaf students, in contrast, employed hand movements or gestures (excluding sign and fingerspelling) most frequently.

By the spring of the 1977-78 school year, the pattern of classroom interactions between deaf and hearing peers was noticeably changed. A total of 129 interactions were recorded during the spring semester with the number of interactions observed per classroom ranging from 1 to 21. In contrast to the fall data, a greater proportion (50%) of the classroom interactions between deaf and hearing students had a social orientation. Furthermore, differences in student roles during classroom interaction emerged. Notably, the initiation of an interaction was undertaken more equally by both deaf and hearing students (Table IX-1). During this period, 57% of the interactions observed were fostered

Table IX-1

Proportion of Observed Social Interactions Initiated by Deaf and Hearing Students during Fall and Spring Semesters of the 1977-78 School Year



by deaf pupils as compared to 43% by hearing students. Apparently, hearing students had assumed a more active role in interpersonal encounters with handicapped peers. A larger proportion of the deaf students' interpersonal overtures were directed toward hearing classmates. During the fall of the school year, 44% of the initiations obseverd among deaf pupils were extended to hearing peers. However, three to four months later in the same school year approximately 75% of the interactions initiated by deaf students were directed toward hearing peers.

Change in inter-student communications were also apparent. Unlike fall semester data, verbal-manual communications were employed by nearly equal proportions of deaf (49%) and hearing (51%) students in the spring sample. The most frequently displayed forms of verbal-manual communication differed for deaf and hearing pupils. Hearing students used slowed speech most often whereas deaf students tended to "mouth" words when employing verbal-manual communication modes. Body language was also employed by nearly equal proportions of deaf (51%) and hearing (49%) students. Hand movements or gestures (excluding sign and fingerspelling) were the most commonly observed forms of body language exhibited by both hearing and deaf students. Change from an emphasis on manual methods (e.g., sign) to more oral communicative efforts may be reflective of the deaf students' adaptation to a speech-oriented environment. Likewise, more frequent use of hand movements and gestures by hearing students is suggestive of a communicative accommodation to deafness.

Observation of Interaction (1978-79)

In the second year, 12 classrooms (3 per site) were utilized to collect observational data on student social interactions in the fall and spring assessment. During the fall semester, a total of 106 interactions between deaf and hearing classmates were recorded with a range of 6-15 interactions per classroom. A total of 71 interactions were recorded in the spring assessment with each class contributing between 1 and 13 instances. Of the total interactions observed, nearly equal proportions were judged to be social or work-oriented (48% and 52%, respectively) in the fall whereas in the spring a greater number of the observed interactions involved work-related themes (68%). This suggests a trend toward work-related interactions (more than were observed) in the prior year.

Consistent with the trends characterizing student interaction during the preceding year, the bulk of observed social encounters were initiated by deaf students (87%) rather than hearing peers (13%) during the initial months of school. Similarly, the deaf students social overtures at this time were directed primarily at other deaf (48%) or hearing (47%) classmates rather than groups of deaf of hearing peers (5%). By the spring semester, a somewhat larger proportion (31%) of the observed interactions was sponsored by hearing classmates. A shift in the focus of the deaf student's peer interactions from deaf to hearing classmates was again apparent. Of the social encounters fostered by deaf classmates, the majority (80%) were directed at hearing peers as compared to a substantially smaller proportion (20%) aimed at deaf students.

Communicative behaviors employed by deaf and hearing students during classroom interactions were recorded with the same scheme utilized during the 1977-78 school year. In the fall, the 593 communicative behaviors identified in all the classrooms involved 106 interactions while in the spring 349 communicative behaviors were recorded during 71 interactions. During the fall term, the largest proportion of communicative behaviors were coded as body language (50%). Most of the observed interactions involved deaf students, accounting for 73% of the total number of communicative behaviors recorded. Among the deaf, the number of communicative exchanges involving body language (53%) exceeded those classified as verbal-manual modes (47%). The most commonly coded form of body language was fingerspelling. Verbal-manual communications were observed less often than body language (30% and 70%, respectively) for hearing students interacting with deaf peers, and nodding or smiling were the most frequently recorded forms of body language used by the nonhandicapped classmates.

During the spring semester, a greater share of the observed interactions involved hearing peers. Although use of body language between students still exceeded verbal-manual modes (61% of the total number of observed communicative behaviors), this form of communication was employed by nearly equal proportions of deaf (56%) and hearing (44%) peers in joint interpersonal encounters. Unlike the fall semester, hand movements were the most commonly observed modes of communication among both deaf and hearing classmates.

In large part, these findings paralleled those described for communication encounters between deaf and hearing peers during the 1977-78 school year. Although the deaf students in the second year sample continued to rely on body language during the spring semester, a shift toward communications likely to be understood by hearing students (i.e., gesture or hand movements) was again observed. Likewise, hearing students adopted their communication attempts with the deaf from vague overtures (i.e., smiling, nodding) to more expressive modes (hand movements) similar to those employed by the deaf classmates.

Peer Ratings

The classroom social climate was assessed during the second and third years by surveying peer perceptions of the mainstreamed deaf students by means of the Peer Rating Scale (PRS). The PRS data was analyzed by classrooms with students receiving a standardized factor score on each of the four behavioral factors (disruptive and attention-seeking, motivation and maturity, social ability, and considerateness) based on classmate nominations. The factor scores were computed by totaling the number of times a given student was nominated by peers for an item. This total was then multiplied by the item's weight (derived from factor analyses) and summed across all items in that factor. These sums were standardized using the classroom median and inter-quartile range. (Due to the skewness of the scores, the median was found to be the best measure of central tendency.) This method of data transformation provided four "V-scores" (standardized factor scores) per student which could be compared within and across classroom settings. These data were examined to determine: (1) the proportion of deaf students in the sampled classrooms who received positive and negative V-scores (i.e., scored above and below their class medians) on each of the four behavioral dimensions; and (2) the proportion of classrooms in which the deaf students had the most extreme V-scores (i.e., scored highest or lowest in their classroom) on each of the behavioral dimensions.

Spring 1978. The PRS was administered during the spring semester in 24 classrooms containing a total of 38 mainstreamed deaf students. The number of students per classroom ranged from 11 to 27, with a median class size of 15. Fifteen classrooms had only one deaf student and nine classes had between two and four deaf pupils.

A preliminary inspection of the data indicated that students' factor scores were based on nominations received from both deaf and hearing classmates. In classrooms with only one mainstreamed pupil, deaf students received between 2% and 8% of the nominations given by hearing peers on each of the four behavioral factors. (In this circumstance, deaf students were forced to nominate hearing classmates.) Nominations between deaf and hearing peers were also common in classrooms with two or more mainstreamed pupils. For instance, the proportion of nominations deaf students received from other mainstreamed deaf classmates did not exceed 20% on any given behavioral factor. Similarly, between 11% and 12% of the nominations received by hearing peers on each behavioral factor were from deaf students.

The proportions of deaf students in the present sample who received positive and negative V-scores (i.e., scored above or below their classroom median) on each of the four behavioral factors are presented in Table IX-2. Included in this table are the proportions of sampled classrooms in which deaf students obtained extreme V-scores (i.e., scored highest or lowest relative to classmates) for each of the four behavioral factors. On the negative interpersonal dimension (disruptive and attention-seeking), 29% of the deaf students scored above class medians whereas 71% received lower scores. Further, in 10 of 24 (42%) classes surveyed, deaf students received the lowest scores among classmates on this dimension. In contrast, deaf students scored highest on this factor in only 8% of the classrooms. These results suggest that peers did not tend to view deaf students as disruptive or attention-seeking in the context of interpersonal relationships.

Deaf students scores on the second factor, motivation and maturity, tended to be more evenly distributed around classroom medians. Across the 24 classes, slightly more than half (58%) of the 38 mainstreamed deaf students scored below class medians. Compared to hearing classmates, deaf students received the highest scores on this dimension in only 8% of the sampled classrooms. Conversely, the deaf were the lowest scoring students in a similar proportion (8%) of these classrooms. Apparently, peers perceived considerable variation among the mainstreamed deaf students on behaviors indicative of motivation and maturity.

The majority of mainstreamed students scored below classmates on the social ability dimension. As shown in Table IX-2, approximately three-quarters (74%) of the deaf students scored below the class median whereas the remaining 26% scored above it. Deaf students received the lowest scores among classmates on the social

Table IX-2

Spring 1978 V-Score Data for Mainstreamed Deaf Students on the Peer Rating Scale

	Peer Rating Factors			
	Disruptive Attention-Seeking	Motivation Maturity	Social Ability	Considerateness
Proportion of Deaf Students Receiving:				
Positive V-Scores	29%	42%	26%	58%
Negative V-Scores	71%	58%	74%	42%
Proportion of Classrooms with Deaf Receiving Extreme V-Scores:				
Highest in Class	8%	8%	8%	21%
Lowest in Class	42%	8%	25%	17%

ability factor in 25% of the sampled classrooms. In contrast, peers awarded deaf students the highest scores on this factor in only 8% of the classrooms. Taken together, these findings suggest that classmates were inclined to view the mainstreamed students as lacking social competence or effectiveness in peer relations.

On the prosocial factor, termed considerateness, relatively similar numbers of the mainstreamed students scored above and below classmates. Approximately 58% of the deaf students scored above the class median whereas 42% had lower scores. Deaf students outscored all classmates on this factor in 21% of the sampled classrooms and received the lowest scores among classmembers in 17% of the classrooms. It appears that substantial variation existed in peer perceptions of the deaf students' prosocial or considerate behavior. The fact that deaf students received extreme scores on this factor in nearly two-fifths of the sampled classrooms suggests that considerateness, or the lack of it, was a particularly salient ingredient in the interactions between deaf and hearing peers.

Spring 1979. The sample of classrooms and deaf students used to assess social climate was approximately half those employed in the preceding year. The PRS was administered in 13 classrooms containing a total of 15 mainstreamed deaf students. Class sizes ranged from 12 to 32, with a median of 17 students. Of the classrooms sampled, eight contained a single deaf student, four had two deaf students, and one class had three deaf students.

Similar to the first year findings, third year data also indicated that student's factor scores were composed of nominations received from both deaf and hearing classmates. The proportions of nominations given and received by both types of students on the individual factors closely resembled the patterns reported for the 1978 sample.

The proportions of deaf students receiving positive and negative as well as extreme V-scores are profiled in Table IX-3. As can be seen, the pattern of scores over the four behavioral dimensions varied somewhat as compared to the findings reported for the preceding year. Consistant with earlier results, the greatest share (66%) of the deaf students scored below the class median on disruptive and attention-seeking. Similarly, 23% of these students received the lowest scores in the classrooms on this factor. As before, deaf students scores on the factor termed considerateness tended to be more evenly distributed around classroom medians. As a group, 47% of the deaf students scored above their classroom medians on this factor whereas 53% scored below this index. Of the students receiving an extreme number of nominations on the considerateness factor, deaf students were the lowest in 2 of 13, (15%) classes and never among those receiving the largest number of classroom votes. Unlike the 1977-78 findings, this sample of deaf students was less likely to be seen as mature and motivated. Nearly two-thirds or more of the mainstreamed students scored below the class median on this dimension; however, only a small percentage (8%) of the pupils received the lowest classroom scores on this factor. Interestingly, deaf students' scores on the factor termed social ability tended to be more evenly distributed around class medians, with 53% of those students scoring above this measure of central tendency.

In general, these findings tend to support the conclusion that peers' perceptions of the mainstreamed students were not stereotypic, but predicated on actual experiences with individual classmates. Furthermore, data for both years suggest positive peer attitudes and acceptance toward the deaf students existed within the mainstream learning environment.

Table IX-3

Spring 1979 V-Score Data for Mainstreamed Deaf Students on the Peer Rating Scale

	Peer Rating Factors			
	Disruptive Attention-Seeking	Motivation Maturity	Social Ability	Considerateness
Proportion of Deaf Students Receiving:				
Positive V-Scores	33%	20%	53%	47%
Negative V-Scores	66%	80%	47%	53%
Proportion of Classrooms with Deaf Receiving Extreme V-Scores:				
Highest in Class	--	--	--	--
Lowest in Class	23%	8%	15%	15%

Note: N = 15

Teacher, Parent and Student Assessments of Friendship Patterns

Teacher, parent and student responses to dichotomous, scaled, and open-ended interview questions were grouped by categories and examined for frequency of occurrence.

Teacher responses. Interviews were conducted with 33 instructors from schools for the deaf and occupational education centers during the first year of data collection. As a whole, teachers were more knowledgeable about students' classroom friendships than out-of-school relationships. Two-thirds of those interviewed were aware of friendships between deaf and hearing classmates. Over half of the occupational education teachers in the sample (who had 5-10 deaf students in their classes over several terms or years) knew of one or two deaf-hearing friendships. Collectively, vocational instructors claimed knowledge of 22 "integrated" friendships, 20 of which were same sex affiliations. Teachers in schools for the deaf, on the average, knew of more deaf hearing classroom friendships (2-8), and, as a group, reported twice as many opposite--as compared to same--sex friendships.

On the other hand, teachers were less knowledgeable about out-of-school interactions between deaf and hearing students. Of the 33 instructors, 10 (or 33%) recalled specific occasions when hearing students invited deaf students to their homes for social activities (e.g., parties, an overnight stay, dinner, playing cards, a picnic, etc.). A similar proportion of teachers reported occasions when hearing students invited deaf pupils to out-of-school activities such as concerts, sports events, or dates. Most interviewees were unable to specify or estimate the frequency of occurrence for these events. An even smaller proportion of the interviewed instructors knew of occasions when deaf students invited hearing classmates to their homes or to out-of-school activities.

In general, teachers provided little specific information about in and out-of-school friendships between deaf and hearing pupils. Most respondents offered speculative replies and often implied that students seldom express attitudes or preferences about friendships and social engagements openly or directly in the classroom. In responding to interview questions, it appears that many teachers were hesitant to offer definitive replies and were forced to rely on inferences and assumptions about student's social relationships. In light of these findings, teacher interviews were suspended during the second and third years of data collection.

Parent responses. During the first year of data collection, a random sample of 26 parents of mainstreamed deaf students were interviewed. These interviews involved both parents whenever possible. However, because both parents were not always able to be present, the results represent the viewpoints of 17 fathers and 25 mothers.

Of the 26 parents interviewed, half (50%) noted changes in their child's behavior since entrance into the integrated occupational programs. The most frequently observed changes cited by parents included: improved social relations (32%); greater overall maturity (16%); better school attendance (16%); and more extensive contact with hearing peers (16%). As can be noted parent observations pointed to a host of behavioral outcomes. Of the many constructive changes cited, parent responses reflected the greatest consensus on improved social relations.

A slightly larger proportion of parents (58%) noted changes in their child's attitudes while attending classes with hearing peers. Parents frequently mentioned the following types of attitude changes: more interested in schoolwork (37%); greater self-confidence (23%); and fewer feelings of inadequacy or fearfulness about the hearing environment (14%). It appears that parents who perceived attitude change as a result of their child's participation in mainstream classes tended to report constructive outcomes. Greater interest in school and increased self-confidence seem to be two of the most commonly cited benefits of this experience.

Information about friendships between deaf and hearing students was also solicited from parents. Fourteen (54%) of the parents interviewed indicated that their child had established hearing friends at school, four (15%) said their children had no hearing friends, and 8 (31%) were unsure or didn't know. Their responses indicate that most of them were unaware of friendships between their child and his/her hearing classmates. Supplementary comments indicated, in many instances, that parents visited the school and observed their child interacting with hearing peers. Others said they were informed about their son's or daughter's friends during family conversations. Additionally, a few parents noted that hearing peers had visited their homes. It is interesting, however, that a third of the parents interviewed were unfamiliar with their child's relationships with hearing peers. In several instances, parents stated that distance or transportation problems interfered with opportunities to learn about their children's school experiences. Several parents also reported that their child seldom discussed or shared information about classroom friends at home.

Parents report on visits from hearing friends to the deaf student's homes. Twenty-two (85%) parents reported that hearing friends had not visited their homes while only four (15%) families said they had entertained hearing peers. Most parents cited travel problems and distance as the primary deterrent to friends' visits. Social occasions (e.g., birthday celebrations) were the principle reason for the few reported visits by hearing friends.

Parents were asked if they thought the mainstreaming experience had helped their child prepare for social interaction in situations such as work or college. Seventeen (or 65%) of the respondents replied that it had helped, four (15%) believed it had not, and five (19%) said they were unsure. Parents who gave affirmative replies supported their judgments with comments similar to those used to describe behavioral and attitudinal changes. Apparently, most parents considered their child's participation in the integrated vocational program as beneficial to future interpersonal interactions in educational and working situations.

In general, these findings were replicated with 22 parents sampled during the second year of data collection. A somewhat smaller proportion (40%) of this parent group noted changes in student behavior. However, similar to the 1976-77 data, improved social relations was the most common behavioral change reported by parents. The proportion of parents observing student attitude change (52%) as compared to those who did not (42%) was also comparable to first year findings. Again, greater self-confidence and self-esteem (33%) and increased interest in schoolwork (33%), were among the most frequently cited changes noted by parents. Roughly the same contingent of parents in this sample (48%) were aware of friendships (or lack of them) between their child and hearing classmates. As in the preceding year, most informed parents said they tended to learn about their child's hearing friends through school visits or family conversations whereas uninformed parents often said they were unable to make school visits or acquire information from their child's remarks at home. The pattern of second year responses regarding potential benefits of mainstreaming on future social interactions also resembled those offered by first year parents. Specifically, 74% of these parents foresaw a positive effect, 17% did not, and an additional 17% were unsure or had no opinion.

In contrast to first year findings, all of the interviewed parents indicated that hearing friends had not visited in their homes. Travel problems and distance were again cited as the primary obstacles to such visits.

Student responses. Interviews with 37 deaf and 31 hearing seniors in the occupational education centers probed the friendship patterns among classmates in these integrated settings. The majority of deaf students (89%) perceived themselves as having hearing friends in their vocational classes. Only two students indicated they did not have any friends whereas the majority (65%) reported five or more friends. Many of the deaf students (54%) felt it was difficult for them to make friends while 46% felt it was not. No information was obtained that would help to explain why some deaf students were more assured or comfortable than others at making friends. However, most of the deaf students indicated that initiating or joining conversations was a useful method for making friends. A few students (14%) indicated that being helpful or acting in a pleasant or friendly manner were effective ways to initiate the friendship-making process.

Self-perceived friendship patterns among hearing students were similar. Twenty-six (84%) hearing students reported having deaf friends, and all but one indicated that these friends attended the same vocational classes. Most hearing students (71%) quoted estimates of 1 to 4 deaf friends; only five students (16%) said they were without non-hearing friends. Differing from their deaf counterparts, most hearing students (77%) did not feel it was difficult to make friends with mainstreamed peers. Interestingly, hearing students tended to cite the same friendship-making skills (i.e., initiating and joining peer conversations).

Second year data tended to confirm these findings. Of the 36 deaf students interviewed 33 (or 92%) said they had hearing friends in their classes at the occupational centers. Greater than half (25 or 76%) of the 33 hearing seniors sampled mentioned friendships with deaf classmates. The number of deaf-hearing and hearing-deaf friendships reported by individuals ranged from 1 to 17, with the majority of deaf students (57%) estimating 10 or more hearing friends and the greater proportion (64%) of hearing students listing between 1 and 4 deaf friends. Reports on the friendship-making process were, in large part, analogous to first year findings. A greater proportion of deaf (31%) as compared to hearing (24%) students felt that making friends was difficult. However, both groups mentioned the same types of social skills (i.e., initiating and joining conversation) as effective means to establish peer affiliations.

In total, these findings suggest that "integrated" friendships were quite common in the mainstream settings, and that most deaf and hearing students participated in such relationships. Although both groups evidenced knowledge of specific social skills required in the process of forming friendships, deaf students were less sure of their skills and more inclined to view the process as a difficult task.

SUMMARY AND CONCLUSIONS

From a social learning perspective, the merits of mainstreaming handicapped children depend on the availability of two essential resources for social learning and development: proximity and social interaction with normally developing peers. In educational practice, exposure to nonhandicapped peers can be insured by physical integration, however, the prerequisite for constructive social interaction is social integration or the provision of an environment free from interpersonal constraints. This study examined some of the social conditions and outcomes experienced by handicapped children participating in integrated occupational education programs.

Several facets of the social environment were explored including the types of classroom interactions and the nature of the social climate or peer attitudes experienced by handicapped students. The data obtained from classroom observations suggest that the pattern of interaction between deaf and hearing peers varied over the course of the school year. During initial months, deaf students tended to interact with each other about classroom tasks or work-related themes and employ body language (e.g., hand movements or gestures) rather than verbal-manual modes of communication. A relatively small proportion of the observed interactions was initiated by hearing peers. However, three to four months later, the pattern of interaction between deaf and hearing peers was more integrated and social in orientation. Furthermore, there was evidence of accommodation by both deaf and hearing students in terms of the types of behaviors employed during communicative exchanges. Apparently, the deaf students experienced greater isolation during the early part of the school year, but tended to become increasingly involved in interpersonal encounters with hearing peers over time. Although it is not possible to determine which group of students initially avoided the other, it appears that early psychological constraints gave way to reciprocal social encounters. This finding is not surprising given McGrew's (1972) findings that relationships between children tend to move through stages and that time is required for "newcomers" to become adjusted and initiate social encounters. However, these findings lend support to the conclusion that the opportunity for peer interaction, an important condition for social learning did emerge over time in the integrated settings.

Classroom social climate, as indexed on the Peer Rating Scale was generally favorable toward the mainstreamed students. Overall, the deaf student's scores on the four behavioral dimensions tended to be heterogeneous indicating that peer's perceptions of the handicapped pupils were not stereotypic, but varied across individuals depending on the specific interpersonal characteristic. In terms of specific traits, peers were least likely to associate "disruptive and attention-seeking" behaviors and social abilities or prowess with deaf classmates. On the other hand, a large proportion of the deaf students were seen by peers as considerate. These data suggest that peer attitudes toward the mainstreamed deaf students were generally accepting and positive, providing a classroom climate conducive to cooperative interaction and friendships.

In general, these data characterize the mainstream social environment as relatively free from interpersonal constraints imposed by peers (e.g., exclusion or prejudicial attitudes) and responsive to the handicapped student's social overtures. Needless to say, these conditions are necessary prerequisites for social integration and "normal" socializing experiences with peers.

The observations and judgments of individuals closely associated with the handicapped students (i.e., teachers, parents, and peers) were used to assess social outcomes in the mainstreamed environment. Perceived changes in social behavior, attitudes, and friendships were considered important indicators of social learning and development. Parents and fellow students were found to be most knowledgeable about social outcomes for the handicapped students. Half or more of the interviewed parents of handicapped pupils attributed constructive changes in social behaviors and attitudes as well as the formation of friendships with hearing peers to the mainstreaming experience. Furthermore, most parents felt that involvement in the integrated programs provided an important foundation for social adjustment in later life and working situations. Apparently, the formation of friendships between deaf and hearing peers was promoted by the integrated milieu. Both types of students, with few exceptions, indicated that "integrated" friendships were the rule rather than the exception. Information obtained from teachers, although much less detailed, tended to confirm the occurrence of deaf-hearing friendships in the classroom and corroborate the replies of parents and students. In view of these findings, it would appear that positive social outcomes can be achieved by many handicapped students when they participate in physically and socially integrated educational programs.

Future investigations should focus on the variety of factors which may influence and promote social integration in educational settings. Little is known about the types of handicapped children who are most likely to profit from mainstreaming. While data from this study illustrates the benefits achieved by many deaf students, it remains unclear how mainstreaming practices will affect students with other types of disabilities. For instance, evidence to date suggests that social integration is a difficult undertaking with retarded children (Rucker & Vincenzo, 1970; Gottlieb & Budoff, 1973; Goodman et al., 1972).

As suggested elsewhere (Asher, Oden, & Gottman, 1976) the determinants of peer acceptance and participation in the peer group may be diverse including: personal characteristics (physical attraction, handicapping conditions); situational characteristics (opportunities for participation); and pre-existing skill repertoires (communicative ability). Situational factors such as class size, physical and organizational structure, and peer group processes may play an important role in the types of social-personal outcomes achieved by handicapped students. Hallinan (1976) found that "open" classrooms, as compared to their "traditional" counterparts have more flexible liking hierarchies and fewer social isolates or leaders. Other investigations (Charlesworth & Hartup, 1967; Quilitch & Risley, 1973) have found that children's social interaction varies greatly as a function of the types of available play activities and materials. Consequently, situational factors may serve as a help or hindrance depending on the educator's ability to control or manipulate them in coordination with the mainstreaming process.

Further research is also needed to assess the long time effects of mainstreaming on other important social-personal variables and outcomes such as interpersonal adjustment in adulthood, self-sufficiency and independence, and job success and career development.

In summary, the present investigation provides supportive evidence for mainstreaming efforts incorporating both physical and social integrations as a valuable resource in the social learning and development of handicapped children.

SECTION X

FOLLOW-UP OF PROGRAM GRADUATES

An important aspect of this study was concerned with the job placement and work achievements of the occupational education graduates. Recognizing the extreme difficulties most handicapped people encounter in locating employment, it was important to find out what happened to the graduates as they proceeded to obtain additional education or to find work. Of primary interest were the problems encountered in seeking and securing employment, the ways in which their occupational education had prepared them to assume the tasks of higher education or of finding a job and succeeding in it, and the attitudes and behaviors of employers who hired and supervised them.

The 36 graduates in 1977 were followed for two years and the 35 graduates in 1978 for one year. Prior to the completion of their program, the students completed an information sheet providing data that would be helpful in locating them after they graduated. They were alerted to future contacts and encouraged to respond to mailings and to participate in the planned interviews that would be conducted.

The graduates of 1977 and 1978 were contacted by mail twice each year using a short form that requested a current address and an update on any changes in their employment or educational status. Once each year, an effort was made to interview those graduates who were employed, unemployed or involved in additional skill training at a sheltered workshop. Insofar as possible those who were employed were interviewed at the place of their employment or at the site of the workshop where they were receiving further training. During these same visits, interviews with individuals who were in a position to supervise and evaluate the graduate's work were conducted. Graduates who were unemployed were interviewed at their homes. Graduates who continued with higher education in degree-granting institutions were contacted with a mailed questionnaire. Their academic advisors also received a mailed questionnaire.

THE 1977 GRADUATES

The 1977 group consisted of 36 graduates (23 females and 13 males). Table 10-1 shows how these graduates were distributed among four major post-secondary groupings three months after graduation, one year after graduation, and at the end of the two year period: (1) employment in a regular work setting; (2) enrollment in a degree-granting institution offering a formal program of studies, placement in a sheltered workshop for further skill training, or post-graduate training at the occupational education center; (3) unemployed; and (4) married and maintaining a home.

Table X-1

Post-secondary Placements of Male and Female Deaf Occupational Education Graduates (6/77) over a Two-year Period

	SEPT 1977			JULY 1978			JUNE 1979		
	M	F	T	M	F	T	M	F	T
EMPLOYED	1	7	8	4	9	13	5	11	16
POST-SECONDARY									
Degree	2	3	5	2	3	5	3	3	6
Sheltered workshop	3	1	4	5	2	7	1	2	3
Post-graduate	1	1	2	0	1	1	0	1	1
UNEMPLOYED	6	11	17	2	7	9	4	5	9
MARRIED	0	0	0	0	1	1	0	1	1
TOTAL	13	23	36	13	23	36	13	23	36

Employment increased gradually from a low of 22% three months after graduation to 36% one year after graduation. Two years after graduation only 44% of the graduates were employed. Male and female rates of employment were approximately in proportion to the sex distribution of the class although the employment rate of boys initially (three months after graduation) was considerably lower than girls'. During the first year, however, 22 of the 36 graduates were employed at least temporarily. Only 2 students were employed for the entire year and increased to 8 during the second year.

The unemployment rate for this group three months after graduation was very high (47%). It dropped to 25% one year after graduation and remained fairly constant at 25% during the entire second year of the follow-up. During the first year after graduation, a total of 28 graduates were unemployed for a period ranging from two months to the entire year. In the second year, 13 students were unemployed for part of the year while 5 students remained unemployed for the full period.

In September 1977, 11 graduates (30%) were pursuing some type of further education. This proportion of graduates remained rather steady (around 25-30%) over the two-year period. Students involved in skill development at sheltered workshop settings accounted for about half of this group since only 5 of the 11 graduates were enrolled in degree-granting institutions during the first year after graduation. Ten of the 1977 graduates (27%) eventually received training in a sheltered workshop over periods extending from one to 16 months. In all, four graduates returned to the occupational education center at some point during the two-year follow-up. Two students were enrolled for their entire first post-graduate year, while a third student dropped out of college, was unemployed for several months, and re-entered the center for the last four months of the first year and the entire second year.

Students attending degree-granting institutions were enrolled at the Technical Vocational Institute (TVI) at St. Paul, Denver Community College, Northern Illinois University and Gallaudet College.

The occupational training they received and the employment they attained show that 9 of the 16 employed in May, 1979 had been trained in the general area of their employment. However, they were employed at jobs which did not necessarily draw on the full range of skills, which they presumably had developed in their courses of study. It would appear that especially those who had prepared for office work, construction, auto repair, and personal services were under-employed.

THE 1978 GRADUATES

The 1978 group consisted of 35 graduates (19 females and 16 males). Table 10-2 shows how these graduates were distributed among the four major post-secondary groupings three months after graduation and one year after graduation: (1) employment in a regular work setting; (2) enrollment in a degree-granting institution offering a formal program of studies, placement in a sheltered workshop for further skill training, or post-graduate training at the occupational education center; (3) unemployed; and (4) married and maintaining a home. One graduate could not be located.

Table X-2

Post-secondary Placements of Male and Female Deaf Occupational Education Graduates (6/78) During their First Post-graduate Year

	SEPT 1978			JUNE 1979		
	M	F	T	M	F	T
EMPLOYED	9	4	13	9	4	13
POST-SECONDARY						
Degree	2	4	6	2	4	6
Sheltered workshop	0	0	0	0	1	1
Post-graduate	3	5	8	3	4	7
UNEMPLOYED	2	5	7	2	4	6
MARRIED	0	0	0	0	1	1
NO INFORMATION	0	1	1	0	1	1
TOTAL	16	19	35	16	19	35

More males (70%) than females were employed at both the three month and full year check points. Over the first year, employment remained steady at 13 (37%) although 20 graduates were employed at one time or another during the 12 months. Six students were employed for the entire period.

Unemployment was much lower than for the 1977 graduates. Only 7 students (20%) were out of work 3 months after graduation. Three remained unemployed for the entire year. Unemployment for the group, however, remained fairly constant with 6 graduates (17%) out of work one year after graduation. Unemployment was experienced by 22 graduates at some point during the year.

Approximately 17% were enrolled in degree-granting programs in institutions of higher education. These students were enrolled at the New Hampshire Vocational-Technical College, TVI at St. Paul, the National Technical Institute for the Deaf and Denver Community College.

Participation in sheltered workshop programs were far less common for 1978 graduates than for the 1977 group, while the number of students who returned to the occupational education center for post-graduate study was markedly increased over the preceding year. The 8 students who resumed their course of study at the occupational centers completed the year except for one girl who left school after 4 months to take a job. Two students received further skill development training in sheltered workshop programs during the year. One male, after being employed during the summer as a farm hand, received 5 months training at a sheltered workshop; and one female, after being unemployed for several months, has returned to the program.

Slightly less than half (46%) of the employed group secured employment related to their training at the occupational education centers. The one male graduate trained in carpentry located a job as a woodworking helper in a wood craft shop and 2 of the 4 students in food service were employed in a cafeteria.

Two of the 11 females in business and office work courses secured jobs in keypunching and data processing and 1 of the 8 girls in hospitality and recreational work was working in a restaurant. As with the previous graduates, it would appear that these graduates were employed in entry level positions that do not fully utilize their skills.

The problems associated with the employment of the graduates are illustrated in the following work histories. It is quite evident that the graduates were not fully prepared to compete in the labor market at the time of their graduation. Some graduates, after being unemployed or underemployed, were accepted in sheltered workshop settings where their work potential was assessed and their personal living and work skills further developed. The work history of E.D. illustrates how this pattern of employment emerged for some of the graduates.

> Upon graduation, E. D., who had completed training in food service, was employed as a farm hand for 3 months. Although he enjoyed the outside work, he did not want to continue working on a farm and felt he was not using the skills he had learned in his occupational training. After contacting the Office of Vocational Rehabilitation, he was placed in a sheltered workshop. After a few weeks, E. D. was given a trial placement in a senior citizens' complex where he has both food service and janitorial duties. His work evaluations have been good and he is considered a cooperative and energetic worker. He has a positive attitude toward his job and his associates, his communication skills are good, and he is considered a responsible employee. After 5 months, E. D. was offered a permanent position in the complex. He lives independently in the community and plans to be married in the near future.

Others, like E. D., seemed to need help in procuring the initial placement as well as the closely supervised assistance afforded by weekly evaluations and regular supervision. There are many aspects of holding a job that were unfamiliar to some of the deaf graduates. Some of the routines that hearing students appear to have learned more readily were not always handled effectively by the beginning deaf worker. The sheltered workshop program, with its emphasis on work habits and attitudes (punctuality, attendance, appearance, attitudes toward co-workers, initiative), as well as its instructional goals focusing on the development of basic and work task skills, provided some of the elements that the young deaf graduate needed in making the transition from school to work. This training, coupled with the individual attention it affords, was the bridge for a number of these beginning workers.

> A. C. completed the autobody course and was unemployed until October when, through the help of his OVR counselor, he was accepted at a training center in order to learn how to rebuild and repair auto parts. A. C. had attendance problems. He was frequently tardy and if he was tired or didn't feel well, he wouldn't show up. A. C.'s counselor discussed his work habits and elaborated on the standards he would have to achieve. His work habits improved greatly during the 16 months he was at the center. He is now independently employed in a garage where he does autobody work.
>
> D. J., a 1977 graduate in keypunch, spent 4 months after graduation trying to find a job before seeking help from a counselor at OVR. She placed D. J. in a sheltered workshop. During the initial weeks in the center, her work potential was assessed and she was eventually placed in a program designed to expand her office skills. At first, she organized her work tasks poorly, made careless mistakes and did not always follow instructions. Since she exhibited weaknesses in language and math, remedial work to improve these skills was arranged. During several trial work experiences of a half-day duration in several different office settings, D. J. showed steady improvement both in her work skills and in her work attitudes and habits. After 15 months in the sheltered workshop, D. J. was offered a full-time office job. After 5 months in this job, she appears to be happy and doing well.

In the sheltered workshop programs, students are evaluated periodically. Factors which are considered in the evaluation include the individual's job performance and work progress, attitudes toward the job and the work tasks involved, attendance, grooming, personal traits, and special skills. Much attention is initially directed at assessing the individual's work potential, and a thorough analysis of the trainee's strengths and weaknesses is conducted. Programs are individualized to meet goals which are jointly established by the student, the workshop staff, and the OVR counselor.

Several students have been successfully employed since completing their courses of study at the occupational education center. L. J. took a job as a keypunch operator shortly after graduation. She has been steadily employed at the same job for nearly 2 years. C. G. was a cosmetology student who passed the state board examination and was licensed as a cosmetologist. C. G. began working as a hairdresser immediately upon graduation and, except for a brief period while she was changing jobs, has remained employed as a hairdresser. After nearly two years in hairdressing, C. G. has taken a position in a factory and maintains her own hairdressing business on a part-time basis.

A COMPARISON OF THE TWO GROUPS

There are many similarities between the two classes. Their rate of employment increased slowly. Some graduates in both classes were employed within a short time of graduation, although the 1978 graduates exhibited a higher level of early success than 1977 graduates. In examining the patterns of their employment and unemployment, it is obvious that many of the graduates are not prepared for the responsibilities of full-time employment. The 1978 group experienced considerable difficulty in finding long term employment. Opportunities for training in a sheltered workshop environment made it possible for them to develop their work skills and personal traits to a level where they would be (and were) employed. Further, the successful employment of a large number of students who participated in the sheltered workshop programs is attributed to the breadth and intensity of vocational assessment that precede individualized program development and to the regular and thorough evaluations that accompany a person's progress through the program.

Although not as many of the 1978 graduates have been enrolled in sheltered workshop programs, several students in this group returned to the occupational education center for an extra year of training. It is apparent that many of these students were either counseled into further training or felt a need to continue developing their work skills.

While some of the graduates were employed in entry level jobs commensurate with their training, particularly those prepared in data processing and office practice areas, others were not. A disproportionately large number were working as porters, dishwashers, parts assemblers, maintenance helpers, housekeepers or kitchen aides. These jobs offered opportunities for the graduates to explore the day-to-day demands of getting along on the job, but they were not positions which offered opportunity for job growth or promotion. These types of jobs, according to United States Department of Labor ratings, do not require any specific vocational preparation nor is a high school level of educational development usually essential in their performance. While the lower level of an individual's achievement in language, reading or mathematical skills could account for the positions obtained by some of the graduates, the discrepancy between their reported high school accomplishments and the jobs they acquired is a source of concern.

In both graduating classes there was a small group of graduates who were never employed or have been unemployed for long periods of time. These individuals are unable to go about the job search, because they lack both information about what to do and the skills to do it. They are dependent on friends, relatives, and others to find jobs for them. Few individuals in this group had made any effort to contact institutions or agencies that would be in a position to assist them in a job search.

THE GRADUATES AT WORK

Over the two year period, 29 interviews with graduates who had been regularly employed were conducted. The 1977 graduates were interviewed each year and the 1978 graduates were interviewed after 3 or more months on the job. Both groups of graduates were contacted at their place of employment.

Interviews were also conducted over a two year period with 31 employers or supervisors. These interviews focused on the attitudes and feelings of employers relative to the employment of the deaf and on the problems and satisfactions they experienced in employing graduates who had participated in the mainstream occupational education program.

Employer Reactions

Many of the employers, while generally positive about hiring deaf graduates, expressed concerns about the safety of the hearing impaired and about their ability to communicate with others in performing the regular routines of their job and in socializing with co-workers. More than half of the employers of the 1978 graduates had never had any previous contact with a deaf person in either a work or social situation. Some of the employers indicated an initial reluctance to employ a deaf person since they were uncertain about their ability to perform the work tasks effectively. Others were very frank in expressing their doubts about the advisability of filling their job opening with a deaf worker but, in view of the applicant's training, felt they should give the graduate a chance to prove him/herself.

The reasons for employing a deaf person varied widely. Referral from Office of Vocational Rehabilitation was more common among those employers who had had previous experiences in employing the handicapped. Others mentioned contacts with the occupational education center or, in some of the larger firms, referral from the personnel office. In several instances, the employer, or someone in the firm, knew a member of the family or a relative. This was an important channel of employment contacts. Many deaf graduates relied heavily on being reffered to a job after someone had made preliminary contact for them with the employing officer.

In the course of the interview, inquiries were made about several aspects of the normal work routines. Special attention was directed at identifying and describing changes or modifications in the performance of a job in order to accommodate a hearing impaired worker.

Redefinition of job duties. Only three employers reported any changes or modifications in the job duties to accommodate the deaf worker. In one instance, the use of the telephone had been assigned to another worker and in a second job, tasks involving the operation of a machine were eliminated since the employer felt that the individual's hearing impairment would prevent the identification of machine malfunctions. In a third situation, front counter communication with customers was eliminated in the rotation of employees and the deaf worker was assigned to work stations where communication was non-essential.

Employers noted some deaf employees were uncomfortable initially in positions where communication with other workers was a part of the job routine. However, they indicated that deaf employees, when left to their own initiative and when given sufficient time, were able to evolve a system that was satisfactory in getting the job done. It was pointed out several times that workers who had speechreading ability functioned more effectively. In general, employers noted that the process of adapting to the job tasks was slower for the deaf workers and that some co-workers, with whom communication was necessary, were unsure of how to handle these situations. Again, given sufficient time, these initial problems were resolved and equally effective routines were established.

Changes in job orientation procedures. Some instruction, ranging from a few minutes to several hours, was essential in helping a new worker become familiar with the work tasks to be performed, the equipment to be used, or the procedures to follow. Employers noted little difficulty with this aspect of employment. In one situation, an interpreter was hired for the first two days to facilitate communication. In another instance, the OVR counselor interpreter while the employer explained the job duties and routines. Several employers noted that job orientation took more time and required special attention (talking slowly, repeating instructions, demonstrating), but they did not find it necessary to make other changes in their training procedures.

Added safety precautions. Safety measures were reviewed extensively with the deaf workers but, except for additional provisions in the event of fire, most employers did not report any changes. Several supervisors were concerned about leaving the deaf employee to work alone (e.g., night janitorial service) and, insofar as possible, tried to arrange the work schedule to prevent this situation. In practically every position, other workers had been alerted to notify deaf employees of fire drills and, in many situations, a "buddy" had been assigned a specific responsibility for the safety of a deaf employee in the event of an emergency.

Approaches to supervision. Supervisory problems were mainly communication problems. Supervisors reported that fulfilling their responsibilities for deaf workers required more of their time, since most communication with deaf workers was accomplished on a one-to-one basis. Supervisors generally communicated instructions by writing, pointing, or mime, and several noted the importance of being sure that the deaf worker understood what was being communicated. One supervisor expressed his approach to supervision in this way: "I don't treat him special but I try to be sure I know how he feels." Other supervisors expressed the same concern for the feelings of the employee. Evaluations were usually accomplished as work tasks were completed. One supervisor had learned signs which he used to rate the worker's job performance (poor, good, etc.). Another supervisor reported a "thumbs up, thumbs down" system which seemed to work well.

Human relations and socialization. Employers overwhelmingly indicated that deaf workers were fully included in the social interactions of the workplace.

They indicated that the deaf employees mixed with the hearing during coffee-breaks or at lunch. Although they reported that some individuals were very quiet or shy at first, other workers seemed to go out of their way to include them. Employers were extremely positive in their assessment of the deaf worker's ability to get along with co-workers and supervisors. In the very few cases where social problems were mentioned, on-the-job horseplay and talkativeness were identified. Isolation, along with other deaf employees, from hearing co-workers was rare, even in situations where other deaf individuals were employed.

Work task performance and employability prospects. Most employers were complimentary in their assessment of the deaf workers' performance. Even though a number of employers indicated that they usually required close supervision, the deaf employees were considered responsible and dependable. Several employers cited the conscientiousness of deaf workers, indicating they would like more employees with the same qualities. Attendance at work was generally good, although some employers noted difficulties in the initial period of their employment (failure to notify the supervisor when delayed or absent from work, tardiness, irregular attendance). These problems were resolved readily.

Personality factors were important in employer assessments of present and future employability. In some situations, the individual's work tasks skills were satisfactory but personal traits interferred with their present accomplishments or their potential progress. Work attitudes were stressed and employers valued workers who could spot jobs that needed to be done and take the initiative to do them. One employer, for example, who was apprehensive about hiring a hearing impaired individual, reported enthusiastically on the worker's dependability and initiative. On the other hand, another employer, in commenting on the individual's future employability said, "I hope he makes it, but his personality will hurt him more than his handicap." Several employers noted dependency on the supervisor or on other co-workers indicating that it was more noticeable at the beginning stages of employment. In comparing deaf employees with nonhandicapped workers, there was a tendency to observe that deaf employers required more time to "fit" into the work flow and routine.

Employee Reactions

The experiences of first and second year graduates were strikingly similar. Many of the graduates liked the work they were doing even if the job didn't utilize their occupational training. Being with other people, the security of earning money, and an interest in the job were three reasons offered for being satisfied with their work.

Like most beginning workers, they were happy and excited about getting a job but "nervous" or "scared" during the first few days or weeks of employment. Most of them felt their experiences in the occupational education center with hearing students had helped to reduce their anxiety about being with hearing people and about communicating with them. Consequently, once they became accustomed to their job, they were very comfortable.

As in their mainstream classroom experience, deaf workers used a variety of procedures to communicate with their supervisors and co-workers. Since they did not have an interpreter available, they had to learn how to communicate on their own. Learning to communicate with others without interpreting service was a new and difficult experience. Most of the graduates reported writing notes as their main means of communication, with voice, speechreading, and demonstration mentioned as frequent alternatives or supplements to written communication. Only one graduate reported using fingerspelling and only three used sign language. Many of the deaf workers, however, were pleased by the interest their co-workers expressed in learning sign language and many reported being actively involved in teaching them sign language.

Generally, these young deaf workers felt good about their ability to get along with their co-workers and supervisors. Of all the employed graduates interviewed for follow-up purposes only two reported a "so-so" feeling about the quality of relationships with co-workers and only two graduates indicated that the other workers weren't interested in them. Most of them felt fully included in the social life of the organization and some of their supervisors and other workers as friendly, talkative, and helpful.

Very few special problems were encountered in the process of adaptation to employment or in fulfilling work responsibilities. When problems with work tasks did arise, the help of supervisors and other co-workers was readily available. Most of the graduates reported being able to perform their job duties either without any changes at all or by devising simple and convenient solutions to problems. When they needed to make calls, for example, other workers or their supervisor would call for them. While many of the workers had trouble understanding people who talked very rapidly, even this problem no longer presented very serious difficulties for most of the graduates once they had overcome concerns associated with the newness of the job experience itself. Even matters relating to the protection of health and physical safety were handled routinely. Most workers were alert to necessary safety precautions and were aware of their individual responsibilities in the event of fire or other emergencies.

Although they had found satisfaction in employment, many of the graduates did not feel their course of study at the occupational education center had been useful in preparing them for the job they were actually doing. Many of the graduates recognized the value of the skills they had acquired in the center, but they did not feel they were utilizing them. Nonetheless, they were more positive in assessing the acquisition of job skills at the center than in the effect of the training in helping them to adjust to their job. A large majority of the graduates indicated that their occupational education experiences did not facilitate their adjustment to the workplace. In their present job, they reported, they were really learning for the first time, how to assume responsibility for their own work.

THE UNEMPLOYED

Students who were unemployed were contacted at home. During the second year, 13 of the 1977 graduates were interviewed and during the third year 10 of the 1977 and 1978 graduates were reached. Since a number of the 1977 graduates found employment in 1978-79 and since more 1978 graduates were working or continuing their education, this group was relatively small.

It was readily apparent from the interview data that those graduates who had been unsuccessful in locating work over the one or two year period since their graduation simply did not know how to go about hunting for a job. While there is some suggestion in the responses of a few that they did not want to find work, it is believed that they were more fearful of the demanding realities of a work situation than uninterested in working.

Most of the unemployed graduates indicated they didn't know whom to contact for help. Four mentioned the possibility of seeking help from a counselor, but only one ever made overt efforts to contact one. Very few had actually visited an employment office or completed an application for a job. Most were relying on assistance which they expected to be automatically given by friends, parents, or relatives. They seemed generally to reflect an attitude of "find me a job." Many of these students were known,from other sources, to have problems which would make it difficult for them to get and hold a job. In several cases, counselors managed to secure placement for them, but psychological difficulties, behavior problems or a low level of communication skills made it impossible for them to keep a job. They were released because their attendance was irregular and considered undependable or because they were unable to accept responsibility and produced inferior or unacceptable work. Of those who had obtained short-term employment, none had been employed over four months. When their own explanations for loss of employment were probed, they reported that unsatisfactory work had resulted in their release or that they had quit working because of interpersonal or communication problems with co-workers or supervisors. These individuals were being supported by supplemental Social Security income or by their parents. They were under little pressure from parents or other outside sources to find work. They evidenced little or no sense of career direction, and the career goals they did express were thoroughly unrealistic considering their past record of performance in school and employment.

This group most definitely was in need of special help and further training. It would appear that their prospects will continue to deteriorate, since they seem to get no encouragement from their family or others to seek help, because they lack the initiative or ability to seek assistance of their own volition, and because unsolicited assistance is unlikely to thrust itself upon them.

GRADUATES IN HIGHER EDUCATION

Occupational education at the secondary level is not necessarily a terminal experience for all students. Several graduates each year were enrolled in post-secondary education at degree-granting institutions where they pursued a variety of programs. Information about their placement and experiences in these institutions offer insights into the motivational benefits, as well as the educational accruements, of a mainstream experience in occupational education.

Both the 1977 and 1978 graduates and their institutional advisors were contacted by mailed questionnaire. Information concerning their adjustment to higher education routines, their strengths and weaknesses, and their general progress in these programs was obtained.

The 1977 Graduates

Two males and three females were enrolled in programs at Denver Community College, the New Hampshire Vocational Technical Institute, Gallaudet College, and Northern Illinois University. Two of the girls who had been in the office skills program were enrolled in data processing programs and the third, an office machines graduate, was enrolled in a general program of studies and the other, a carpentry major, pursued a liberal arts course.

Of the five who started college in September 1977, four (2 males, 2 females) finished the first year. One female dropped out almost immediately because of homesickness. However, she returned to the occupational education center where she enrolled in the data processing course.

Since these students were enrolled in institutions that offer specific programs for the hearing impaired, support services helped in minimizing their readjustment problems. Two cases will help to illustrate their experiences.

> K. P. was placed in a preparatory program one summer after she graduated and enrolled in the general clerical program at the beginning of the fall semester. Her program included bookkeeping, typing, business machines, data processing and basic studies in English, math and social studies. During the summer, the Hester Vocational Evaluation System was used to assist in determining an appropriate vocational goal. Interpreting, notetaking and tutorial services were provided upon request. K. P.'s progress during the first year was most satisfactory. Her advisor reported good progress and indicated that K. P. demonstrated a great deal of social maturity and responsibility. K. P. is successfully finishing her second year at this institution.
>
> T. A., the aviation mechanics graduate, enrolled in a special program for the hearing impaired immediately following his high school graduation. His program involved academic remediation to prepare him for college. He attended classes with only deaf students. Special tutoring services were available for extra help. His advisor reported that T. A. was doing well in all areas and did not require close supervision. T. A., an outgoing and resourceful young man, was active socially with both deaf and hearing peers.
>
> At the end of his first year, T. A. transferred to another institution where he is pursuing a general engineering program. Since his English and math background is somewhat deficient, he is taking pre-tech courses to improve his skills. He is highly motivated and his advisor

> reports that T. A. is anxious to get on with more advanced studies. He perceives T. A. as having more personal and social awareness than students with a similar background. He attributes this to his previous preparation in high school and college. T. A. is highly motivated and, although it is too early to predict his future employability, it appears that he will complete the degree program.

One of the two females who completed the first year of college did not return for her second year. Her progress during the year had been most satisfactory and her advisor reported they had tried to encourage her to change from her course in key punch to a more challenging and stimulating program. Despite her academic success in college and her additional preparation, she was unemployed during 1978-79.

Two females and one male embarked on higher education programs after being out of high school one year. Two of these students (one male, one female) had been unemployed while the third, who had been employed as a key punch operator, left work to return to school. All three were enrolled in institutions that provided support services to facilitate successful completion of the program. Feedback from their advisors would indicate that these students will complete their program with good prospects for their employability.

The 1978 Graduates

Two males and four females were enrolled in programs at the National Technical Institute for the Deaf, Denver Community College, and the New Hampshire Vocational and Technical Institute. Two students were enrolled in vestibule programs during the summer in preparation for their admission to data processing and offset lithography programs in September 1978. One student enrolled directly in a general clerical program in September, and the other three pursued preparatory programs which provided remedial work in English, math and reading. All six students completed the academic year successfully.

These six students also elected to attend institutions offering specific programs and support services for deaf students. Thus, graduates, from both years chose to attend institutions where instructional services were calibrated to meet their needs. Their selection of higher education institutions is particularly noteworthy since every graduate had participated in a mainstream experience at the secondary level. The students participating in higher education are graduates of schools in all four research sites.

Not all the students were considered adequately prepared. The advisor for one of the students reported the following information:

> X has quite a few deficiencies. He/she has poor reading and math skills and, in addition, he/she does not seem to have the motivation necessary to be successful in the program. He/she is not as well prepared as the other students enrolled in this program. He/she has a very poor attitude, does not attend classes regularly nor does he/she complete his/her homework assignments. He/she is undependable and is not conscientious. I do not feel his/her lack of efficiency is related to his/her deafness. Prospects for his/her employability upon completion of the program are very poor and unless his/her attitude changes, he/she will not be able to acquire the necessary skills.

Another counselor noted that the student had social difficulties stating, "He/she 'flies off the handle,' misses classes, and fails to complete work. He/she seems to have some psychological adjustment problems that may cause difficulty on the job. He/she has good and bad days and counseling is being provided."

Some students seem to have potential but aren't demonstrating their full capacity. As one of the advisors writes, "He/she needs to be reminded about his/her responsibilities. He/she has a tendency to try and avoid difficult assignments. When the class becomes difficult, he/she wants to withdraw." This reaction was frequently expressed by employers as well and may well reflect the educational experience and background of many deaf students.

Some students are highly motivated. They are considered "hard-working," "conscientious," and "persistent." The institutions they have selected are prepared to provide remedial courses in English, math and reading--all areas in which academic deficits are regularly noted. Most of the students indicated a need for further training in order to qualify for a job. This appeared to be their primary motivation for pursuing post-secondary education.

Post-Graduate High School Training

During 1977-78, three students (2 females, 1 male) returned to the occupational education center for further study. One girl, a food services graduate, entered the baking course in September and completed the full year of study. After graduation, she was still unable to locate work. After consultation with the OVR counselor, she was referred to a sheltered workshop where, after consultation, an individualized program in general clerical skills was established. This student, showing slow but steady improvement after ten months in the workshop, was still continuing the program in June 1979. The other female returned to the Center in March 1978 to start the key-punch program and continued in that program through June 1979. The one male student returned to continue his studies in the autobody course. In January 1978, he left the Center to take a job in a store. He was released from this position after several weeks because his work was unsatisfactory. Since April 1978, he has been unemployed. Eight 1978 graduates (5 females, 3 males) returned for further study at the Center and seven completed the entire year of study. One student studying keypunch left the program in January 1979 to take a job as a keypunch operator. A few students in one site were retained for an additional year of occupational education accounting, in part, for the sharp increase in the number of students who pursued post-graduate study.

It is obvious that for some students participation in the mainstream occupational education program provides the necessary training and experience for obtaining a job. However, for a greater majority it appears that two years in the program is insufficient. Weaknesses in math, reading or language skills and difficulties communicating in a learning environment inhibit normal progress in a two-year sequence. When they are pursuing their programs in the Center they seem to be satisfied with the program. However, after they graduate and secure employment, they become more critical of the training provided. Those who are unable to locate jobs, seek help in sheltered workshop situations. Even those graduates who pursue workshop programs in degree-granting higher education programs select institutions where provisions to accommodate their hearing handicap are available. While lower levels of academic achievement for deaf high school graduates is a recognized fact, these students are no exception.

There is little doubt about their ability to pursue and succeed in occupational education programs. However, considerable attention must be directed to their basic skill deficiencies and their communication problems with hearing people. Most importantly, since their progress will be slower, more time for the completion of these courses should be provided.

Although many of the graduates who were eventually successful in securing jobs received satisfactory (or better) work ratings,they were not employed in positions that were commensurate with their presumed level of educational attainment or work competency. In short, they were underemployed. While employers were satisfied with their job performance in these positions, they did perceive these graduates as employable in positions more equivalent with their preparation. Not only were many of these graduates perceived as lacking in the work performance skills required for entry into these higher level jobs, they were generally judged to be lacking in work attitudes and behaviors befitting these positions. Many employers commented on deficiencies in punctuality and attendance and on the need to develop a more responsible, dependable, mature approach to their work. That accommodations for the quality of their performance has been made because of their deafness was noted in examining work expectations and work evaluations in the occupational education classroom. While "trade standards" are used in assessing work skills, there is reason to believe that these standards of skill performance may be observed less often in evaluating deaf students. The development of work habits and attitudes should be measured more specifically than at present and the standards for their expression in job performance should be as consistently high as for their hearing counterparts.

If deaf students are to be prepared to enter the labor market or to compete academically in all institutions of higher education, exposure to work and experiences that foster work habits and attitudes with "pay off" in jobs that more fully tap the real potential of the deaf student must be provided earlier and more regularly. There is little doubt about the value of contributions by the mainstream experience in occupational education to the developmental progress of the deaf student. Its impact on their learning-maturation has been helpful. However, for many, if not most, it appears to be a case of "too little, too late." This is not an indictment of the educational efforts made on behalf of these students; it is acknowledgement of the fact that the job is not finished. Without lengthier and more clearly focused efforts to cultivate not only adequate knowledge and performance skills, but strong habits of work, attitudes, and sensitivity to the realities and demands of the adult work role the career outlook for program graduates is not bright. The results of this study suggest that the cooperative mainstreaming programs are an enlightened step in the right direction. What is needed now is a bolder, more strenuous extension of program directions and efforts.

SECTION XI

PARENTAL AND STUDENT REACTION

Having examined purposes, processes, and environmental features of the cooperative mainstreaming programs, attention logically turns to the questions related to outcomes or consequences of these programs. Consequently, the objective of this section is to document actual and perceived program outcomes and relate them to previously identified educational goals and processes.

PARTICIPANTS' OPINIONS, REACTIONS, AND EVALUATIONS

Interviews probing parents' and students' judgments about the mainstreaming program were conducted during each year of the study. Evaluative comments were sought relative to three areas: general program value, program articulation and communication, and perceived program outcomes. During the first year of the investigation (1976-77) 37 deaf seniors and 31 hearing classmates were interviewed. A total of 12 randomly selected parents of senior students were also interviewed at this time. The following year (1977-78), interviews were conducted with a second random sample of 36 deaf and 33 hearing seniors, and 13 parents. The third year sample consisted of 35 deaf seniors and 14 parents.

Because it was of interest to learn about parents' expectations and concerns about the mainstreaming experience, a questionnaire probing these issues was distributed by mail to the parents of all mainstreamed deaf students early in each school year. Taken together, the parent questionnaire and interviews enabled an assessment of expectations regarding the program, satisfaction with the mainstreaming experience, and the changes in perspective that actual association with the program effected. In general, the topical content of the questionnaire remained constant from year to year. Specific items within each area varied from one year to the next in an effort to clarify or expand upon information obtained in preceding years. During each year of data collection, questionnaire content addressed two main areas: the general value of the program and program articulation and communication. Different questionnaires were sent to parents of continuing and new students during the third year: one for entering students which was essentially the same as the questionnaire used during the preceding year, and one for continuing students which omitted questions related to entry and orientation into the cooperative program.

During the first year of the investigation the parent questionnaire was mailed to the parents of 92 students entering their junior or senior year in the mainstream programs. Completed questionnaires were mailed to the University of Rochester. Parents of students enrolling subsequent to the opening of school were omitted. Of the 92 families receiving the questionnaire, 83 (90%) returned them. Most of the completed questionnaires were filled out by both parents (74%) and the balance were completed by the student's mother (25%) or father (1%). A total of 90 families received a questionnaire during the second year. The response rate of 62 (69%) was substantially below that of the first year, despite follow-up efforts to improve returns. Again, most (85%) questionnaires were completed by both parents. The third year mailing to 77 families, resulted in a 65% rate. The majority of questionnaires (82%) were also completed by both parents.

General Program Value

Students. Interviews with students were designed to gather evaluative information about a variety of program factors including: personal satisfaction (i.e., likes, dislikes); the development of work skills (i.e., acquired, unacquired, and intended use of job skills); classroom instruction (i.e., teacher characteristics, course difficulty, sources of help); evaluation practices (i.e., testing and grading) and post-graduation outcomes (job plans and readiness).

In terms of personal satisfaction, student "likes" depended on their interest in the subject matter content and the skills stressed in the occupational programs and on the enjoyment they derived from the pursuit of these interests.

The majority of deaf ($\geq$ 73%) and hearing ($\geq$58%) seniors interviewed during each year of the investigation evaluated their interest in the courses of study favorably. In the final year of the study 91% (32 of 35) deaf students gave subject-matter oriented reasons as the principal source of satisfaction with their experiences in the cooperative program. A favorable attitude toward instructors was also mentioned as an important factor by a third or more deaf and hearing students in each sample. Less frequently reported advantages of the mainstream program were the opportunities it afforded for association with friends or peers for access to certain kinds of equipment.

Furthermore, many students interviewed during each year of the investigation expressed no particular dislikes. For example, of the students interviewed in the first year sample, 43% of the deaf and 52% of the hearing respondents reported no dislikes. A similar pattern characterized student responses in the second year sample; and among deaf respondents in the third year the absence of specifically identified dissatisfactions was even more striking (54%). Of the expressed dislikes, vague criticisms of coursework and programs were predominant. However, there was very little specificity regarding the nature or source of these problems. A few students in the first and second year samples hinted at dissatisfaction with the classroom working conditions and social atmosphere, and a small proportion of those interviewed cited communication difficulties with peers. There was a notable change in the third year, however, when almost 30% of the deaf students interviewed expressed some level of dislike for the work environment and/or social milieu of their occupational education classrooms.

Students were also questioned about the adequacy and utility of the work skills fostered in the cooperative occupational programs. Overwhelmingly both hearing and deaf students, 66-97% of groups interviewed over the course of three years, felt they would be able to use their learned skills to get a job.

Moreover, a large majority of the interviewees each year indicated their intention to seek employment requiring the use of course-related skills. Compared to hearing peers, a somewhat larger number of deaf students believed that their work skills were inadequate or fell below trade standards and would be unmarketable.

The replies of deaf and hearing peers differed regarding work skills they still needed to acquire. A substantial number of deaf students (58-66%) tended to stress course-related skills, many of which were actually a normal part of the course curriculum already. A majority of hearing students ($\geq$ 61%), on the other hand, either saw no need for expanding course curricula to include a wider range of skills or stated a desire to learn skills which were beyond the scope of their programs.

Students were also asked to comment on several aspects of their classroom experience including: teacher characteristics, sources of classroom help and teacher assistance, and degree of course difficulty. Both deaf ($\geq$ 67%) and hearing students ($\geq$ 87%) consistently expressed a positive evaluation of their teachers. Among the remaining respondents neutral opinions were about twice as frequent as explicitly critical attitudes toward teachers. In the final year, for example, only three deaf students (each from a different program) expressed harshly critical views of their occupational education teachers. The teacher characteristics to which deaf and hearing seniors alluded were essentially alike. They included friendliness, helpfulness, tolerance, patience, understanding, knowledge of subject matter, and approachability. When asked about assistance in the classroom, nearly all of the students (deaf and hearing) in each sample ($\geq$ 80%) indicated that help, when needed, was provided. A majority of hearing students interviewed ($\geq$ 56%) cited the instructor as the main source of help in the classroom. Many deaf students interviewed each year mentioned the instructor

(10-15%), peers (25-40%), or both (≥ 20%). Interestingly, mention of interpreters or other types of student support services was relatively infrequent, except in the final year when 10% indicated reliance on interpreters and another 17% indicated receiving the joint assistance of teachers, peers, and interpreters.

In order to examine student's perception about the extent to which teacher assistance was available in the classroom,seniors were asked if their instructors could have been more helpful. Deaf student replies differed somewhat from year to year. Of the deaf pupils interviewed during the first, second and third years of the study, 46%, 44% and 49% respectively felt some need for more assistance than they received. Most of the deaf students in the first year sample did not specify how teachers could have been of greater assistance, however 14% of this sample did suggest that their teacher's needed to learn sign language. In the second year sample, deaf students articulated more specific recommendations for teachers including: instructional adaptations such as more frequent explanations or demonstration (44%); organizational changes, including more time to practice specific skills (14%); and better communication skills (11%). Finally, in the third year indications of unmet needs emphasized the need for more effective explanation and clarification of instructional content. Hearing student replies, in contrast, indicated greater satisfaction with the existing availability of teacher assistance. A large proportion of hearing students in first and second year samples (≥70%) expressed no discontent with teacher helpfulness and had relatively few recommendations for specific improvement. In the third year a more explicit effort was made to determine the specific manner in which additional assistance was provided. Verbal explanations (43%) and demonstration of performance skills (29%) constituted the vast majority of efforts to provide follow-up help. About 10% believed no special efforts to provide supplemental help were made on their behalf.

Questions surrounding the degree of course difficulty provided a third source of evaluative information from students about classroom instruction. The intent of these questions was to identify student perceptions concerning the relative ease or difficulty associated with coursework. This might be attributed, in part, to basic learning deficiencies (e.g., math, language), communication problems, or psycho-motor difficulties. Response patterns observed for deaf students from year to year were highly variable. Response skills indicative of basic skill deficiencies ranged from 16% (years one and three) to 33% (year two). Communication problems were noted by 14% of both first and second year samples of deaf students. Almost half of all respondents in the first year found it especially difficult to understand instructions given in class, while in the third year 71% mentioned a related difficulty, a need for greater clarity in explanations given by teachers. Only in the second year did a substantial number (19%) experience difficulties in meeting course-related demands for developing or exercising psycho-motor skills.

In contrast to the coursework difficulties reported by deaf students, hearing students tended more frequently to report problems associated with manual dexterity. For example, in the second year sample, 58% of the hearing seniors cited concerns about coordination dexterity requirements whereas problems with basic learning deficiencies or communication were less frequently mentioned (18% and 3% respectively).

Student perceptions regarding the usefulness of testing and grading practices in the classroom were also explored with deaf and hearing seniors within the samples drawn from each year. In the first two years of the study substantial proportions of the deaf ($\geq$ 47%) and hearing ($\geq$ 72%) students agreed that tests served a helpful or useful function. In the third year there appears to have been, according to student responses, a diminished reliance on testing.

Only 54% of deaf students interviewed reported taking tests. Of these only 11 (31%) felt they fulfilled a useful function. The deaf were generally more critical than hearing students of testing procedures utilized in the classroom, with most citing the language contained on tests as a barrier to their meaningfulness or personal utility. Those students who endorsed testing programs or procedures did so for several reasons. Across samples, the most commonly recognized benefit of testing mentioned by deaf and hearing seniors was that tests alerted them to their degree of progress and self-improvement in coursework. Other less frequently noted functions served by tests were the identification of weaknesses and fostering or reinforcing efforts to learn required materials.

Similarly, senior students tended to sanction grades as a useful part of the learning process in occupational courses. Three fourths or more of both deaf and hearing interviewed each year reported that grades were of benefit. Most students, however, could not articulate exactly what was learned from grades. With few exceptions, both groups of students simply acknowledged that grades signified evidence of progress and performance and/or allowed for comparisons among students relative to performance criteria.

Parents. Parents' perceptions of program value, as assessed by questionnaire during the initial months of the school year, were profiled yearly for junior and senior students. Specifically, in the investigation's first year, parents were asked to indicate in response to two open-ended questions the benefits and disadvantages thought to be associated with their child's participation in the cooperative occupational program.

Parents of junior and senior students gave highly similar responses when asked what benefits would be realized by their child through participation in the mainstream occupational program. Almost half of all responses (46%) elicited from parents indicated that the primary benefit was meaningful job training. An additional 13% of the replies listed growth in career development as an asset. These responses referred to opportunities for exploring a variety of job areas, learning about jobs and career choices, and examination of self abilities in relation to the world of work. A somewhat smaller proportion of responding parents cited general positive outcomes such as general educational development (8%), and experience in a hearing work milieu (8%). The balance of responses were vague or indicated a lack of knowledge about possible benefits achieved. Overall, most parents emphasized job-related outcomes, a finding consistent with the data reported in earlier sections on parent objectives for occupational education programs.

In contrast, few parents indicated specific disadvantages or negative outcomes associated with the occupational education mainstreaming experience. Of those citing disadvantages, occasional mention was made of diminished stress on traditional academic objectives, the difficulty the occupational setting exhibited in accommodating instruction of the deaf, and a belief that the quality or level of training offered was inferior and an inadequate preparation for employment. The majority of this group (approximately 55%) thought the program was relatively faultless.

Similar questions were employed during the second year of data collection to probe parents' views about program benefits and disadvantages. However, the response mode was altered so that each parent (mother and father) was asked to endorse or negate 14 statements about the benefits for a deaf student attending the mainstream program and 16 statements about the disadvantages inherent in this experience. Checklist items were representative examples of five "benefit" or "disadvantage" categories identified within the first year data.

The categories and corresponding items employed to survey program benefits were as follows:

A. Job training

It is good that:

1. My child is learning a trade.
2. My child will have a better chance of getting a job.

B. Career development

It is good that:

3. My child can explore different job areas.
4. What is learned at BOCES will be helpful no matter what job he/she gets.
5. My child can find out if he/she likes certain kinds of work.
6. My child can find out what abilities or skills he/she has.

C. Personal development and maturation

It is good that:

7. My child will be happier.
8. My child will be able to develop self-confidence.

D. General educational development

9. My child will have more opportunities for success in school.
10. He/she will have a better attitude toward school.

E. Experience in the hearing world

It is good that:

11. He/she will be in a class with hearing students.
12. My child will learn to communicate with hearing students.
13. My child will learn better to communicate with adults who do not know how to talk very well with deaf students.
14. My child will be more able to function in the hearing world.

As in the preceding years, there was considerable agreement among parents as to the job training benefits thought to be provided by the occupational program. Learning a trade was seen as a benefit by 95% of the parents of juniors and 78% of the parents of seniors. Similarly, increased probability of obtaining employment was seen favorably by most parents of junior (88%) and senior (96%) level students. Career development opportunities were also heavily endorsed with 82-85% of the parents offering positive responses to the four career development items. Fathers of juniors tended to validate the career development aspects of the occupational training more often than fathers of seniors, whereas mothers of juniors and seniors did not differ widely on this dimension. However, mothers of seniors (77%) were less likely to see the program as helping their child to discover his or her abilities than mothers of juniors (90%). Personal development and maturation were also seen as desirable products of the mainstream occupational experience. Overall, 73% of the responding parents felt their child would be happier and 89% expected growth in self-confidence. Parents of seniors were more likely than parents of juniors to endorse the attainment of personal happiness (81% vs. 63% respectively) and self confidence (93% vs. 85% respectively). Aspects of general educational development, compared to other areas in the checklist, were validated by somewhat smaller numbers of parents. Approximately 70% of the respondents gave affirmative responses to each of the two items in this category. A similar proportion of parents of students at each grade level saw greater opportunities for success as a potential outcome whereas parents of seniors were more likely to perceive positive attitudinal change as a program benefit.

Most parents also tended to view experience in the hearing world as a potential benefit from the program. Although only 79% of the parents checked being in a class with hearings peers as an asset, 95% of the respondents thought their child would be better able to function in a hearing world as a result of participation in the mainstream program. Between these two extremes, 85-90% of the responding parents endorsed improvement of communication with hearing peers or adults as a program benefit. Overall, there was little difference in the pattern of responses for parents of juniors and seniors on these four items.

In summary, parents were generally positive in their views regarding expected benefits of occupational training in the mainstream program. All of the benefits listed, irrespective of type, were nominated by at least two-thirds of the responding parents.

Parents responses to the 16 possible disadvantages were also provided in checklist form. The five categories and corresponding items were as follows:

A. Less stress on academics at the school for the deaf

It is a drawback that:

1. My child has less time for his school work at the school for the deaf.
2. My child cannot take the courses he/she wants at the school for the deaf.

B. Level and type of training offered at the OEC

It is a drawback that:

3. Two and a half hours at BOCES is too long to spend on one course.
4. Two and a half hours at BOCES is too little time to spend learning a trade.
5. The training received at BOCES is too little to be helpful later.
6. My child won't be able to get a job in the area he/she is being trained in.

C. Personal problems (at the school for the deaf and at the OCE)

It is a drawback that:

7. My child has less time to be with his/her friends at the school for the deaf.

8. My child has less time for clubs, sports, etc., at the school for the deaf.
9. Hearing students ignore deaf students.
10. Hearing students tease deaf students.

D. Support services for deaf students

It is a drawback that:

11. Teachers do not know sign language.
12. There are not enough interpreters.
13. My child can't get the extra help he/she needs.

E. Logistical problems

It is a drawback that:

14. Transportation to BOCES takes too much time.
15. Going to and from BOCES each day is dangerous.
16. Students miss too much time at BOCES because the school for the deaf has a different schedule.

Proportionately, parents of deaf students were less inclined to acknowledge disadvantages than advantages associated with attendance in the mainstream occupational program. Analogous to first year findings, a frequently anticipated disadvantage of occupational courses was the diminished opportunity for pursuits at the home school (for the deaf). Concern about this outcome was more prominent among parents of juniors (40%) than seniors (20%). In terms of specific items, roughly equivalent proportions of the parents of seniors (≈ 20%) were concerned about time spent on academic work and opportunity to enroll in desirable courses at the home school. Parents of juniors, in contrast, were somewhat more concerned about the availability of specific courses than the amount of time spent on academics at the home school (48% and 32% respectively).

A similar share of the respondents indicated the lack of support services as a potential disadvantage in the occupational setting. The provision of interpreters was a concern designated by 43% of the responding parents. Teachers unfamiliarity with sign language (34%), and a lack of individual help (33%) were also commonly identified problems. These concerns were shared to approximately the same extent by parents of junior and senior students alike.

Logistical problems were seen as a disadvantage by relatively small numbers of the responding parents. Only 6% of the respondents were concerned about travel safety, 13% cited conflicting school schedules as a disadvantage, and 21% felt that travel time between schools was a detriment to educational progress. The majority of parents concerned about travel time were from the research site with the greatest travel time between schools. (This difficulty has subsequently been remedied by the relocation of students to an occupational center near the home school.) Differences between parents of juniors and seniors were small, given the small proportions of respondents citing this type of disadvantage.

Of the four items representing the level and type of training offered in the occupational program, two were concerned with the amount of time spent in the program and two with employment potential. Relatively few respondents (7%) chose to nominate the length of class sessions as a drawback, however, a substantially larger number of parents (22%) indicated that the course length was too little time for learning a trade. Interestingly, parents of seniors were more inclined to support this criticism than parents of juniors (31% vs. 10% respectively). The relationship between participation in an occupational course of study and employment prospects was a concern to 11% of the respondents who felt that the training received was likely to be too little to be helpful later. Parents of senior level students (15%) nominated this item more often than parents of juniors (5%). In addition, 26% of the respondents (again, with parents of seniors outnumbering parents of juniors) feared that their child would not be able to get a job in the area of his or her training. Apparently, parents, especially those with children approaching the job market, begin to shift their attention away from concerns about home school offerings to issues surrounding preparation for employment.

Parents perceptions of the potential emergence of personal problems as a result of attending the mainstream program were surveyed with respect to each school setting. With respect to the home school, more parents (29%) were concerned about their child's time with deaf friends than time for clubs and sports (9%). This response pattern did not differ greatly for parents of junior or senior students. Relative to the occupational setting, nearly equal proportions of parents (≈ 30%) were inclined to believe that hearing students would ignore or tease their child. Parents of seniors, were less likely to check these items, perhaps indicating that a year's prior experience with the program had disarmed many of these concerns.

Overall, the proportion of parents indicating disadvantages related to enrollment in the mainstream program was substantially lower than those indicating benefits. With respect to the parents completing questionnaires during this year, no more than 43% endorsed the existence of fears or concerns about any single disadvantage.

The questionnaire mailed during the third year of the investigation explored parents' perceptions of program value by utilizing the same questions developed for second year data collection. These questions were included on forms for parents of both continuing and new students.

The parent views on general program value sampled during the third year did not differ substantially from those charted during the two preceding years. Again, the majority of respondents (three quarters or more) were inclined to give favorable responses to items describing job training, career development, personal development and maturation, general educational development, or hearing world experiences as potential program benefits.

Parents sampled during the third year were also in agreement with their first and second year counterparts regarding program disadvantages. Frequently, endorsed disadvantages again included: less stress on academics at the home school; lack of support services in the mainstream milieu; length of occupational courses or classtime devoted to learning a trade; personal-social problems; and logistical problems associated with program enrollment.

Parent interviews provided an additional source of information about perceived program value. In contrast to the parent questionnaire which focused largely on family expectations, interviews were conducted with parents whose children were completing the final semester of an occupational course in the mainstream program. Consequently, these interviews provided information about parent satisfaction and criticisms after considerable involvement in the program.

The parents in the interview samples drawn in each year of the investigation were asked to comment on their perceptions regarding: (1) major benefits, (2) disadvantages, (3) areas for improvement, (4) ability to advocate and (5) unique aspects of the cooperative mainstreaming program. Also, as an overall indicator of parents' attitudes toward the mainstream program, each was asked to (1) rate their own satisfaction and their child's satisfaction with the program over time using a 5-point scale ranging from very positive to very negative; (2) indicate whether or not they would decide to place their child in the program if they had to make that decision again.

Parent interviews conducted during each year of the study revealed information which was largely similar to that obtained from parent questionnaires and student interviews. Nearly all parents felt that participation in the program had benefited their child. The single most common response (30-40%) mentioned that learning a trade or job preparation was the primary benefit of occupational education. Slightly smaller proportions of the samples felt that the experience had enabled their child to develop social interactions with hearing students (23-34%) or become more self-confident, self-sufficient, or independent ($\geq$ 15%).

Less frequent, but nonetheless notable replies alluded to more general outcomes (e.g., improved outlook on life, more aware of responsibilities, etc.).

Like the information gleaned from parent questionnaires and student interviews, the majority of respondents in first and second year samples ($\geq$ 61%) did not specify any program disadvantages. Of the few mentioned, most centered around excessive travel time between schools, the lack of interpreters in many classrooms, or loss of time in academic pursuits at the home school. In the final year of the study fewer parents (44%) found it unnecessary to register objections to the program. Half of the parents questioned the benefits of the program to their children. While none of the specific concerns were mentioned frequently, they tended to concentrate most heavily on the quality of training, its relevance to employability, its duration, the students' satisfaction with their occupational courses, and the disadvantages of dividing their time between two different schools.

When asked how the mainstream occupational program might be improved the majority of parental responses (60%) reported that (1) improvements were unnecessary or (2) they were not in a position to make such recommendations. One or two respondents in the second year sample stated a need for improved guidance counseling, more interpreter services, or coordinated schedules for the cooperating institutions. Only 32% of the responses obtained in the third year could be considered an unqualified endorsement of the programs. The remaining two-thirds of the responses recommended improving communication among the occupational training center, school for the deaf, and parents; complained about scheduling difficulties, and the lack of exploratory options. In addition, mention was made of a need to update the equipment and resources available in the occupational education centers.

Parent perceptions were also solicited concerning uniqueness of educational functions and services rendered by the cooperating schools. The largest proportion of respondents (68%) reported job-related aspects of the program (e.g., job training, skills, experience) as the most distinctive and unique feature of the occupational education experience. Other less frequently mentioned attributes thought to be available only within the mainstream program were job placement services and special help. In these interviews, as elsewhere, parents focused more emphatically on employment-related benefits than any other program feature.

Parent advocacy for the mainstream program was explored as an indirect measure of overall satisfaction. A majority ($<$ 60%) of the parents interviewed each year had never recommended the program to other parents. Of these parents, nearly half stated that they had experienced no opportunity to advocate the program. Approximately 30% of the parents indicated at least one instance of active advocacy.

More direct overall measures of parent satisfaction focused on parents' perception of their own feelings and their child's feelings about the mainstream experience over time. In response to the question "How do you think your child felt about the BOCES program?", 60-70% of the parents in each of three parent samples interviewed selected "very positive" on a 5-point scale ranging from "very positive" (5) to "very negative" (1). Virtually all other respondents rated their child's feelings about the cooperative program as "generally positive," a scale rating of 4. Similarly, parents rated themselves, with one or two exceptions as "very positive" ($\geq$ 76%), or "generally positive" ($\geq$ 15%) in the first and second years. Only one parent in either sample selected the rating "very negative" and mentioned that the occupational program had not been a profitable experience. Parents interviewed most recently (1978-1979) were somewhat less enthusiastic. Half of them were "very positive" and 30%

"generally positive" in their feelings. On the other hand, none expressed negative feelings about the programs. Further confirmation of the trend toward favorable parent attitudes was provided when almost all, i.e., more than 92% of all parents responding over all those years, said that, given the opportunity, they would again make the decision to enroll their child in the mainstream occupational program. Most parents justified their consistency on this decision on the grounds that their children had acquired useful job skills.

Summary and conclusions. The majority of evaluative comments solicited from students and parents concerning their perceptions of the mainstream occupational education program were positive and supportive. Parents and students alike tended to view the occupational programs as playing a constructive role in job preparation and readiness for work. Apparently the program, and its course offerings, were consistent with parent's purposes or objectives for occupational education, and provided experiences congruent with student plans and expectations for later employment. Most students expressed little discontent with either the program itself (e.g., instruction, course difficulty, grading practices) or the perceived products of their experience in the program (e.g., learned skills, potential employment outcomes). On the contrary, most students saw themselves as benefiting from their participation in this learning milieu. Deaf students, however, were more likely than hearing classmates to express uncertainty about the competencies acquired during this phase of their schooling.

As might be expected, parents of first year students (juniors) were more likely to report concerns surrounding the change in programs or transition from home school instruction to occupational training. However, as the prospect of employment entry approached, parent concerns tended to shift from questions about program logistics and offerings to apprehensiveness about the adequacy of job preparation and readiness for employment. It appears that parents of juniors were more likely to be concerned with the formative aspects of the program (i.e., career development, expanding awareness of individual abilities, etc.), whereas parents of seniors tended to emphasize placement and readiness for employment and job success (i.e., acquired skill competencies).

The data obtained from questionnaires and interviews, exploring parent expectations and reactions respectively, were largely consistent. This would suggest that over the course of their association with the program, the experiences parents encountered did not substantially alter or contradict their original expectations concerning the value of the program.

Program Articulation and Communication

Using the same information gathering tools, data were collected on students' and parents' perceptions of the communication process between program staff and students and between staff and parents. Student interviews on this topic were restricted to deaf pupils, and explored their views regarding the frequency and nature of communication between students and teachers. Data on parent views were again assembled by means of questionnaires and interviews which probed parents involvement in decision-making processes and contact with school personnel concerning evaluation and planning for students, and counseling or advisement.

Students. Interviews with deaf seniors during the first year of the investigation resulted in the following summary observations: Most of the interviewees reported that they relied on speech to communicate with teachers. Signing was cited in a small number of instances (22% of this sample). In conjunction with this information most of the deaf students' evaluations about the ease of communication between themselves and the teacher were negative, and often emphasized difficulty in being understood. The use of an interpreter as an intermediary was cited by only one student in this sample.

Student's comments in the second and third years of the study were similar, but somewhat more specific. The most common single mode of communication used with teachers by interviewees was speech (25% in the second year and 37% in the third). Some students also cited pencil and paper methods (14%), or sign in combination with some other form of communication such as writing (11%) in the second year. In the third year over half of the students reported using multiple modes of communication involving some combination of speech, sign, demonstration, writing, and/or use of reverse-interpreting service. Speech in combination with one or more alternative modes of expression were mentioned in 30% of all third year responses. Compared to first year data, the use of interpreters was mentioned by a substantially greater number of deaf students (25%) in both second and third years.

Deaf students were also asked to describe how their teachers attempted to communicate with them. The methods identified and proportions of students reporting each method was roughly the same as reported for student initiated interactions in the first and second years of the study. In the third year the data seemed, however, to suggest somewhat heavier reliance by teachers on the services of an interpreter (31%) to communicate with the deaf than by deaf students themselves in their efforts to interact with teachers. After describing the communication process, the deaf students in the sample were also asked to provide evaluative comments regarding the ease with which they felt communication was accomplished in student-teacher interactions. The largest single group of respondents from year to year (42%-46%) expressed difficulty in being understood by their teachers in relation to academic and instructional matters. Another 25% reported that teachers were hard to understand generally (e.g., spoke too quickly).

Parents. Questionnaires sent out during the first semester of each school year explored the views of parents of junior and senior level students regarding their role and involvement in the decision for their child to begin the mainstream occupational program. Specifically parents were provided with a 7-item checklist designed to identify whether or not they had attended informational meetings, received a list of courses offered, met with occupational education staff members, or visited the occupational education center while classes were in session. In addition, respondents were asked about their role in the process of identifying and deciding whether or not their child should be enrolled in this program. Parents were asked to indicate where the idea for attendance originated, if tests were used in this process, and who was involved in the decision for placement and course of study. Also parents were asked to indicate their attitudes toward the recommendation of placement in an occupational program and the course of study their child eventually pursued.

Information obtained from the parent questionnaire indicated nearly all of the respondents had received some form of information about the occupational program prior to their child's attendance. Of the parents responding during each year of the investigation, many reported receiving a list of courses (≥ 45% of each group). Smaller proportions of the respondents in each sample mentioned attending an informational meeting (≥ 33%) or meeting with their son's or daughter's counselor (≥ 33%). Meeting with teachers or school visitations were seldom cited by any group of respondents. Interestingly, mothers and parents of seniors, as compared to fathers and parents of juniors respectively, were more likely to report participation in informative functions.

Regarding placement decisions, approximately half of the parents responding in each year felt that the decision was made jointly by their child, the school for the deaf, and themselves. Most of the remaining replies were split between parents who felt they alone had been responsible for the decision, and those who felt the school had made the decision independently. Parents in the second and third year samples were also asked who first initiated the prospect of mainstream placement and if tests had been used to identify student interests. Most of these respondents believed the school for the deaf to be the instigator of placement plans. However, smaller proportions of the parents said the idea had been initiated by the child (15%) or themselves (6%). Approximately one-third of the parents returning the questionnaire in the second and third years of the study knew of testing procedures used to identify their child's interests or aptitudes. Interestingly, first year respondents believed that parents or students were responsible for the final decision regarding placement, whereas a large share of the second and third year parents (39-42%) thought that the school for the deaf actually decreed program choices.

Parents were also asked who chose the course of study their child was taking at the occupational center. First and third year respondents, in nearly equal proportions (36-42%), replied that course selection was made by students or by students and interested adults (parents and school personnel). Responses gathered in the study's second year differed by grade level. Parents of juniors indicated that courses were chosen by students (35%), personnel at the school for the deaf (23%), or students, parents, and school personnel acting in concert (19%). Parents of seniors, on the other hand, indicated that course choices were made by the child, parents and school (28%), the student and the home school (22%), the home school alone (20%), or the student alone (20%).

Finally, parents were asked to evaluate whether or not they approved of their child's enrollment in the program and the type of course pursued. The data assembled from each year revealed that between two-thirds and three-quarters of the respondents checked the responses "strongly in favor" or "in favor" on a

5-point positive to negative scale. Few of the respondents polled each year gave neutral ($\leq$ 3%) or negative responses ($\leq$ 11%). Similarly, the majority of respondents (55-62%) from each mailing endorsed their child's course of study. Additionally, a substantial number of responding parents (24-39%) qualified their endorsement approving of the course of study pursued by their child by indicating that other courses offered at the occupational centers would be unacceptable. Parents reporting disapproval of their child's course of study were a distinct minority ($\leq$ 6%).

The degree of contact with school personnel and opportunity to be informed of student evaluation and program planning was explored during the interviews instituted with randomly selected parents of seniors.

Parent contacts initiated by teachers at the occupational center appeared to be infrequent. Most of the first year sample replied that no contacts had been made, although isolated instances of such contacts were reported and centered around job placement or other post-graduate plans. Over half (61%) of the parents in the second year sample stated that they had not been contacted by an occupational education teacher, whereas slightly under a third (30%) of the sample said that they had. Parents responding in the affirmative reported a variety of idiosyncratic reasons for teacher contacts including: need for additional school books, job openings or placements, and disciplinary problems. In the third year sample, those who responded to this question (86%) were equally divided between those who reported contacts by teachers or counselors (43%) and those who had no direct staff contacts (43%).

Additional information was solicited regarding the types of information received by parents with respect to educational planning or progress evaluation for their child. All of the first year parent sample, 69% of the second year sample, and 79% of the third year sample said that report cards were used to convey evaluative information. The balance of the second and third year samples either vaguely mentioned progress reports of some sort or were unaware of the reporting method. While the first year interviews yielded little other useful information, parents in the second year sample gave more detailed replies. For example, of this group 70% stated that report cards and progress reports were issued by the school for the deaf. This is inconsistent with third year data in which 65% of the replies indicated that the occupational education center sent reports directly to parents. Only 20% of these parents indicated that occupational education grades were transmitted through the school for the deaf. Nearly half of these parents (46%) mentioned the inclusion of a checklist in the grade report which evaluated classroom social-personal traits and behavior. When asked if student evaluation methods were beneficial and complete, 70% of second year respondents said it was not or were unsure of its adequacy. The third year sample was more often (58%) satisfied with the general information contained in progress reports, and 79% indicated that the completeness of reports was acceptable. Parents were also asked if individualized educational planning was employed with their child and who was involved in this. A substantial proportion of interviewees, 46% and 36% in the second and third years respectively, were unaware of or reported that no such planning occurred. The uncertainty of parents about the educational planning process was further verified by the high variability of their impressions about the probable locus of responsibility for planning. Only one parent in the second year sample and one in the third year reported involvement in counseling services. One instance involved an attempt to gain summer employment for a student; the other case involved an informal assessment of a student's developmental progress. Conferences of any kind between parents and occupational education staff were apparently rare. Parents reported being generally satisfied with the limited amount of communication between home and school. Most parents indicated they would be interested in establishing more intensive contacts with the schools only if there were serious problems involving incompatibility between students and teachers or if severe academic or discipline problems arose. In the third year sample, however, in response to more specific probes many parents did indicate concerns that could be dealt with through improved home-school communication. These included interest in more specific and detailed progress reports, questions about the value of occupational courses vis´-a-vis´ employment opportunities, the treatment of the deaf students by hearing students, the level of work skills developed through the programs, and questions about their child's growth in independence and self-sufficiency.

Summary and conclusions. The findings presented in this section provide information about students and parents perceptions of the communication process existing between students and teachers and between the program and parents. In addition, it presents a pictures of parents' perceived role and satisfaction with the various stages of identification, placement, and maintenance of handicapped students in the mainstream setting. From the student's perspective, it appears that classroom communication demands are seen as requiring speech rather than sign or fingerspelling. In addition many deaf students expressed concerns about being understood by their teachers in this predominantly oral environment. This appraisal, whether based on an accurate assessment of the situation or not, would seem to be a possible detriment to student satisfaction and, perhaps, progress in the program.

Parents saw themselves as being involved in several functions of the mainstream program such as decision-making and awareness of student evaluation outcomes, but less instrumental or involved in identification, planning, or advisory capacities. Most parents reported learning of course offerings at the occupational center and being consulted about their child's placement in the program.

However, substantially fewer parents felt a part of the process used to identify prospective candidates or plan for their vocational training. Rather, the majority of respondents saw the school as responsible for selection and planning functions. One exception was that most parents believed that their child was permitted to choose (often with guidance) a vocational course of study.

Parents tended to perceive actual contact with occupational education staff members as infrequent. Most all reported communications were conducted by mail. Surprisingly, a very low proportion of parents reported involvement with school-based counselors.

Parent's summary evaluations regarding student placement and involvement in the mainstream program were, for the most part, positive as were their attitudes toward the course of study pursued by their child.

Perceived Program Outcomes

Student and parent interviews conducted during each year of the investigation also probed respondents' views regarding post-graduation plans and outcomes. In particular, questions focused on these issues were intended to shed light on parents' and students' convictions regarding the contribution of the mainstream occupational program to desired employment and post-secondary educational outcomes.

Students. When asked about post-graduation plans, a large percentage of deaf ($\geq$ 50%) and hearing ($\geq$ 32%) seniors interviewed during each year stated that they intended to seek employment. The balance of deaf and hearing students reported plans to continue their education, a small number by extending their occupational course for an additional year and the rest by seeking entry into some other post-secondary program.

Other questions attempted to ascertain whether seniors intended to seek employment in areas congruent with their occupational training and whether they felt sufficiently prepared to enter the job market. Most students reported a desire to obtain employment in their chosen area of occupational training. Deaf students, however, were less certain about their preferences in this respect than their hearing counterparts. For example, in the first year student interviews, 68% of the deaf and 71% of the hearing seniors were interested in acquiring jobs in the vocational area related to their training. Of the deaf seniors stating this goal, 27% qualified their response by stating that jobs in other areas would suffice if a more appropriate position were not available or obtainable. In contrast only 10% of the hearing seniors qualified their responses in this manner. Also, a small percentage of these deaf (14%) and hearing (10%) seniors stated a desire to obtain employment outside the area in which they had received occupational training. Third year data differed rather sharply from preferences expressed during the first year. Only 40% of the deaf students expressed a distinct preference for training-related employment. Of these 4 (11%) were already employed and 10 (29%) were still attending school full-time. Only 8% expressed disinterest in training related employment and 15% were undecided. The remaining students anticipated continuing their education in preference to seeking employment.

An attempt was also made to determine if students saw the occupational program as facilitating their preparation for employment. In response to this question, a majority (63%) of the deaf and hearing seniors in the first and second years of data collection responded in the affirmative. In the second year sample, student responses also indicated that 46% of the deaf students and 84% of the hearing students believed they were ready to seek employment. Apparently, the deaf students were, as a whole, somewhat less convinced of their readiness to obtain employment. The third year data departed from earlier findings in this respect also. Only 43% of deaf respondents felt their training would prepare them for a job. Eleven percent were uncertain about the benefits of training and 16% were skeptical about the contribution of their coursework to future employability. Another 30% did not respond or were not interested in pursuing employment immediately after graduation.

Deaf and hearing students also differed with respect to plans for identifying jobs. Strategies articulated by the deaf seniors were brief and vague in comparison to those stated by hearing peers. The deaf mentioned parents, friends, agencies, school personnel, and other intermediaries as a means of contacting employers and arranging interviews whereas hearing classmates reported what might be considered more aggressive and energetic techniques (applying in person, reading "want ads," filling out applications).

Parents. The random sample of parents selected for interviews during each year of the study were asked to comment on their child's post-graduation plans. Of the responses given by parents sampled each year, immediate employment was the most frequently cited objective. Plans to enroll in college or institutions offering post-secondary technical training were in a distant second place to employment. About 60% of all parents interviewed in each project year indicated that employment was the immediate post-graduate goal of their son or daughter. Intentions to attend college or obtain further technical training were attributed by parents to 20-25% of the deaf occupational education students. The remainder of the parents interviewed were either unaware of their child's plans or felt that plans for the future were not yet well formulated. This pattern of responses closely resembles that given by students, suggesting that there was little disparity between parents' and students' perceptions regarding post-graduation plans.

Because obtaining a job or admission to higher education requires the development of specific competencies, parents were also asked their opinion about the extent to which the occupational program had prepared their child to pursue these goals and plans after graduation. The profile of parent responses was similar for each year. Most respondents, 70% or more of the parents interviewed each year, felt the program had provided the needed preparation for subsequent career choices. There were various reasons for parental confidence in the career development value of the cooperative program. Most thought it provided a useful basis for further training or developed the specific job skills that were necessary prerequisites to employment. Some also indicated that it broadened the deaf students' awareness of career options, contributed to the discovery of new interests and of previously unrecognized potential, or had helped the students' adaptability to the hearing environment. A much smaller proportion of these parents (15-30%) either believed the program had failed or were unable to make an assessment of program value.

Summary and conclusions. Parents' and students' perceptions about program outcomes were highly similar and seemingly in accordance with previously articulated goals and aspirations. In general, both students and parents alike viewed the occupational program as a useful prerequisite to employment and opportunities for higher education. Among students, the deaf were somewhat less inclined to feel prepared for career advancement or inclined to actively seek out and obtain a training-related job.

STUDENT WITHDRAWALS

An effort was made to interview all of the mainstreamed students who dropped out of the cooperative occupational programs during each of the three school years covered in the study. These interviews were designed to elicit the students' reasons for dropping out of the program as well as their opinions of, reactions to, and evaluative comments about several aspects of their experience.

First Year Withdrawals

During the first school year (1976-77), 14 of the 84 (17%) mainstreamed deaf students enrolled in occupational training courses at the four research sites withdrew from the program. A majority of these dropouts (10 of 14) were from the same training site while the remaining four were from a second site. Two programs had no student attrition in the first year. Interviews with 10 of the 14 students dropouts were conducted.

Perceived cause of withdrawal. Student reasons for terminating enrollment in the occupational education program varied. Two students expressed general unhappiness or dissatisfaction with their specific training course. Two others reported that teacher demands and classroom responsibilities were unreasonable or objectionable. Others cited difficult tests and excessive homework, peer problems (i.e., teasing from hearing classmates), and parental dissatisfaction with the program.

Additional information obtained from school personnel indicated that 4 of the 14 students who withdrew had been expelled from the school for the deaf. Three of these students were permanently separated from their home school and one student returned but was not permitted to resume participation in the cooperative program.

Personal satisfaction. Of the 10 students interviewed, eight reported a favorable reaction to various aspects of the occupational program and the mainstreaming experience. Three students responded in general terms indicating the program of study they had pursued was "o.k.," while five students evidenced more satisfaction, indicating that they enjoyed the teachers, students, interpreters, and some of the class activities. Two students expressed a strong dislike for the mainstreaming experience citing communication and interpersonal problems with their teachers and classmates.

Program content. Students who withdrew during the first year of the investigation were asked to identify aspects of the occupational program which they had found to be particularly easy and difficult to master. Four of the ten interviewees stated that the vocabulary, including technical terms, used in their courses was hard for them to understand and two others mentioned classroom tests as a source of difficulty. The remaining interviewees identified problems understanding the textbook, doing the math, or learning required "hands-on" skills. Only one student indicated that "nothing" in the program had been too difficult. All but one student mentioned some aspect of the occupational program that had been easy to master. Student responses tended to focus on specific work tasks or skills (e.g., making donuts, washing cars, soldering wires).

Need and availability of assistance. All but one of the interviewees acknowledged the need for assistance in their coursework at the occupational center. Of these students, three mentioned needing an interpreter and one a tutor. Eight of the 10 respondents indicated that some form of assistance had been available. In elaborating on the sources of help, they cited their hearing classmates, the interpreters, and the project coordinator. According to most of the interviewees, these people provided individualized help by explaining material that the deaf student found difficult to understand.

Integration with hearing peers. All ten dropouts reported that the mainstream classes were their first with hearing peers. Half of the students approved of this arrangement whereas three of the ten did not. The two remaining students gave rather ambivalent responses indicating that it was "sometimes all right" to be with hearing peers in the classroom. The five students who approved of the integrated classroom mentioned affiliative ties (e.g., friendships) and the personal benefits of being integrated with regular students (e.g., receiving help) as justification for their evaluations. Conversely, the three students who were displeased with the integrated setting cited communication problems and peer rejection as the basis for their disapproval.

Interestingly, 8 out of 10 withdrawals said they had developed friendships with hearing students in the occupational program, estimating the number of these friends to be between 1 and 5. However, half of the respondents indicated that the process of making friends in the integrated classroom was difficult, often requiring assertive efforts such as introducing themselves or asking questions.

Second Year Withdrawals

During the course of the second year (1977-78), 17 of the 78 mainstreamed students (22%) enrolled in the occupational program withdrew from the program during the school year. In addition, 9 other students failed to re-enroll in the occupational program at the beginning of the school year in September, 1977. Student withdrawals during the second year were distributed over the four occupational program sites. Of the 26 students who dropped out, 24 were contacted for interviews.

Perceived cause of withdrawal. Several students (4 or 16%) said that they withdrew from the program to take a job. Another 16% cited poor grades and parental dissatisfaction with the program. Three other students reported that their parents had arranged for them to drop the program in order to pursue more academic studies at the school for the deaf. These students also referred to poor grades or declining progress in their occupational program. Three other students mentioned problems understanding the teacher and two others said that being the sole deaf person in the classroom made them uncomfortable.

Other reasons for withdrawal, each cited by two students, included ridicule by hearing classmates, expulsion for behavior problems, and not being recommended for continuation in the program. Reasons for separation from the program cited by individual interviewees included general dissatisfaction with the program, personal problems, absenteeism from school, and not feeling challenged by the coursework.

Personal satisfaction. Like the 1976-77 dropouts, 71% of the interviewees (17) reported liking their area of study in the occupational program. However, only about a third of the respondents said they liked their teachers and the other students in the program. Only 4 (or 16%) said they did not like anything about the program. About one-third of the students had no specific program dislikes or complaints. Communication and interpersonal problems were primary sources of program problems and dissatisfaction. Some found the classes boring and a few felt the occupational education teachers gave preferential treatment to hearing students.

Program content. Second year students cited specific work tasks and skills as the easiest part of the program (e.g., painting cars, cooking, keypunching). Only three students could not identify any program activity that was easy to accomplish.

On the other hand, a greater number of the withdrawals had some difficulty with the instructional process. Eight students mentioned problems understanding the classroom teacher or some aspect of the course content. Four other students stated that evaluation methods (tests) were hard to understand and complete (concerns cited by a similar proportion of the first year dropouts). Some students encountered difficulty in performing specific work task requirements (e.g., welding, sanding cars, food preparation).

Need and availability of assistance. Most students (21 of 24) felt a need for assistance in understanding the course material and tasks presented. Specific needs, identified in supplemental comments, included help in interpreting classroom lectures, understanding work task procedures, and reading directions or labels. Some indicated a need for tutorial assistance in math. Over 80% of the students agreed that some form of assistance was available, although not all of them had utilized their resources fully. About half of the students acknowledged hearing and deaf peers, interpreters, project coordinator and individual attention from the teacher as sources for the help they needed.

Integration with hearing peers. The majority of second year withdrawals (19 of 24) had not participated in classes with hearing classmates prior to attending the occupational program. The other five respondents reported some form of educational contact with hearing peers including summer school programs or prior enrollment in a hearing school.

A majority (62%) of those interviewed felt positively about their experience in the program, eight others reported negatively, and one student had no strong feelings either way. The reasons for favoring this arrangement were similar to those mentioned by the first year withdrawals -- peer affiliation and personal benefit. Similarly, of the students who disapproved, most cited communication problems, peer rejection, or the behavior of their hearing peers as the source of their dissatisfaction. Almost every student (23 of 24) reported having friends at the occupational center. However, most of them acknowledged some degree of difficulty in making acquaintances and developing friendships.

Third Year Withdrawals

In the third year (1978-79) six students (8%) withdrew from the program. Three additional male students, who were enrolled in the program in 1977-78, were classified as non-returnees since they did not return to the occupational education center in September 1978. Of the nine program dropouts, one moved out of state, six were interviewed and two were unavailable. The six 1978-79 school year dropouts (4 males, 2 females) were located in two research sites, one site had four withdrawals, the other had two. The three non-returnee withdrawals were located at the other two research sites. They were enrolled in a variety of courses including autobody, machine shop, carpentry, culinary arts, data processing, commercial art, masonry, and computer programming. The responses of the interviewees were much the same as those who withdrew in the two preceding years.

Perceived cause of withdrawal. The students who were interviewed offered several reasons for dropping out of the occupational education program. Two students left to take full-time jobs. Five of the students felt the work was too difficult indicating they had trouble understanding the teacher and following the interpreter. As a result, they experienced a great deal of confusion and dissatisfaction. Other reasons cited included being uncomfortable as the only deaf student in the class, the teacher's inability to use sign language, the limited availability of their interpreter, boredom, and feeling that the course was a waste of time.

Personal satisfaction. Three students liked their area of study and felt they were learning skills which they could use in a future job. Although one of these students didn't like school, he liked working with his hands. Three students reported there was "nothing" they liked about the program and one of these students felt that everything was hard. Some of the students disliked the class routine, indicating they did the same thing everyday. Others disliked not being able to understand the teacher and having to learn new terms and words (vocabulary). In elaborating on their difficulties, it was clear that some of the students, like previous dropouts, were following behind because they didn't understand what was being taught. They seemed to find the theoretical aspects of the courses too difficult to follow. As a group, they didn't seem to follow the class presentations, and they felt uncomfortable asking questions in class.

Program content. They were most comfortable with "hands-on" work. They liked running machines, using equipment and tools and performing certain very specific work tasks. Among the things they mentioned as difficult were the following: making scale measurements, remembering the steps involved in an assignment, understanding written instructions with technical terms, remembering terms and new words.

Need and availability of assistance. All the students indicated they needed help. Two students felt they needed help in understanding course assignments citing particularly a need to have the teacher's instructions explained. Some wanted to have their work checked more often, while others needed help with test-taking problems. Hearing peers, teachers, and interpreters had been helpful but the deaf students felt they needed more help than was regularly available.

Integration with hearing peers. None of the withdrawals had attended classes with hearing students before participating in the occupational education program. Those who liked attending classes with nonhandicapped students felt it was important to learn how to get along with all kinds of people, because one must associate with many different co-workers on the job. Those who didn't like being in a program with hearing students referred to the communication problems as a major source of discomfort. Only one student, on the other hand, reported not having any hearing friends at the occupational education center. Most of the students had several friends although they found it very hard to make friends. They had discovered that introducing yourself, working with hearing peers, and asking others for help were the best ways to make friends with hearing classmates.

Three of the six students expressed an interest in attending college or in obtaining some type of additional training beyond high school.

Summary

Over the three year period of the study, 40 of the 49 withdrawals were interviewed. Although year by year differences in the specificity of opinions and reactions were noted, the same general content was reflected in all three years.

A substantial number of withdrawals reported difficulties with classroom instruction and evaluation processes. These students reported problems in following teacher presentations, in following procedures, and in acquiring additional explanations. Most of the content-related difficulties encountered were with theoretical or conceptual material or with technical terms and the vocabulary associated with the course. There was considerable agreement among the dropouts concerning their inability to understand the teacher and to deal with highly technical or conceptual information. They had trouble with test-taking procedures, usually in reading the tests or in understanding the requirements of an evaluation task. Given the degree of similarity in all three years to the difficulties expressed by the dropouts, it is apparent that student attrition was related, in part at least, to their inability to cope with the methods of instruction and evaluation used in many of the classrooms.

Practically all of the dropouts cited a need for help in understanding the teacher and in dealing with aspects of the course content. Some recognized their own reading and math deficiencies while others simply indicated that the levels of reading and math were too difficult. All of the dropouts recognized the availability of support services but indicated it was generally insufficient for their needs. Several simply failed to take advantage of the services available.

A majority of the students expressed some degree of uncomfortableness attributed to being in a class with hearing students. A small group of the dropouts were able to express their dissatisfaction with this situation while others, aware of some discomfort, were not able to identify some of the negative feelings that seemed to undergird their dissatisfaction with the learning environment in the program. Most of the students who failed to survive in the mainstream program were in classes with hearing peers for the first time. Problems with peer relations were attributed most often to harassment or teasing by hearing peers. Yet, on the other hand, all of the dropouts reported having friends at the occupational center. They reported being uncomfortable with hearing peers and reported making friends at the center as a difficult undertaking.

Consequently, difficulty with their courses and peer problems were reasons frequently cited for withdrawal from the program. Although a few students left the program to seek employment, a large number returned to their home school and an academic course of study. There is some suggestion that students returned to their home schools as a release from the anxiety and the uncertainty they experienced in coping with the problems and demands of a learning environment that was quite different from the one to which they had become accustomed.

SECTION XII

LOOKING TO THE FUTURE: OLD PROBLEMS AND NEW DIRECTIONS

That a majority of the deaf students in the cooperative occupational education program expressed positive feelings about their experience in the occupational education centers and that even a few were successful in finding employment commensurate with their training is an indication of the potential in partial cooperative mainstreaming as well as in the concept of mainstreaming itself. The schools in this study have pushed forward in a persistent and diligent effort to provide a broader range of educational opportunity for deaf youth and to establish an effective and productive environment where learning-maturation could occur.

Through their participation in this three-year study, they have made it possible for others to build on their experience. Their concern in meeting the special educational needs of deaf youth precedes by several years the legislative mandate of Public Law 94-142. They have paved the way, in the fashion of the pioneers that they are, for the further exploration of this mandate and its implementation in the education of the more than eight million handicapped children in the United States today. In both their successes and failures, they have illuminated the potential in the mainstreaming movement as well as its problems and pitfalls. They have demonstrated how institutions and the personnel that staff them can work cooperatively toward a common goal. There is a lesson for professional educators and the lay public in the history of these programs and their development and in their efforts to resolve the many problems they encountered.

The burgeoning literature about mainstreaming, while helpful in stirring the collective conscience of both educators and the lay public, offers few, well-validated guidelines to help the educator develop and implement programs that provide adequately for the educational needs of the handicapped. Some publications describe, in general terms, the mainstreaming experiences attempted thus far. Others delineate handicapping conditions and suggest ways for diagnosing and treating individual deficiencies. A few identify the administrative and instructional concerns posed by a mandate for the "least restrictive environment" in Public Law 94-142. By far, however, the largest body of mainstreaming literature is discursive, relying for its justification essentially on the unsystematic accumulation of experiential evidence, on speculative analyses of the needs and abilities of handicapped children, or both.

Great difficulties surround efforts to organize and conduct applied research, sufficient in breadth and depth to contribute effectively to understanding and solving problems related to mainstreaming. Nonetheless, we have reached a point where we can no longer afford to develop programs designed to promote the effective integration of the handicapped in school and society without simultaneously seeking the benefits of further research and demonstration information.

This study of institutional cooperation for mainstreaming deaf students in occupational education continually strives to maintain a dual perspective. It has focused both on the unique functions of educational mainstreaming services specifically suitable for the deaf adolescent, and on considerations which relate more generally to a child's status as a handicapped person. In many respects, therefore, the issues dealt with, the data observed, and implications suggested have sufficient generality to make them deserving of serious consideration in planning and conducting programs for the education of the handicapped. The population of deaf students upon which this particular study focused is, admittedly, homogeneous with respect to the general nature of their handicapped condition. There is no denying that distinctly different disabling conditions must be provided for in different ways in the educational setting. On the other hand, there is little evidence to support the assumption that particular obstacles to maximum cognitive, social, vocation, and personal development are exclusively associated with specific handicapping states.

In facing the challenges in the years that lie ahead, it seems more appropriate to establish educational policy on the needs of all young people--handicapped and nonhandicapped--and to develop programs that meet these needs. This means identifying the commonalities in human learning-maturation and discovering approaches that accommodate special needs and adapt to limitations of handicapped individuals while they foster and facilitate growth of handicapped and nonhandicapped in desired directions.

The presumption that differences not only justify but necessitate the separation of "normal" and "exceptional" students has long governed educational policy and practice. Detectible differences among normal and handicapped youngsters has resulted in "labeling" and specialized treatment. Furthermore, the dichotomy between the "normal" and the "exceptional" has resulted in educational efforts for the handicapped that emphasize their deficiencies and limitations, that is, what "they can't do," rather than what they "can do" and what they "can learn to do." Conventional practice, implicitly if not explicitly, has been designed for and confined to providing educational benefits consistent with existing limitations and deterrents to normal development and progress. Programs have proceeded from the assumption that the nature and degree of nonnormality is the basis for prescribing the nature and quantity of special services to handicapped children. The attitudes of school personnel and the characteristic permanence of special placement indicates clearly that restoration to a more "normal" educational environment has not been a major objective of special education. It is hardly surprising, therefore, that the recent judicial and legislative challenges to current practice have met widely with unenthusiastic skepticism by all types of educators, including those who provide special education and those who will bear the heaviest burden of mainstreaming--regular classroom teachers.

The legislative mandate to provide maximum levels of appropriate participation by handicapped children in regular educational programs cannot be fully implemented within the framework of traditional notions of special education. The law and judicial interpretations emphasize a continuous, cyclic program of student evaluation and individualized program planning and placement. It is quite clear that the very purpose of P.L. 94-142 is to make participation in regular education an over-arching objective of special education incorporating, as necessary and appropriate, services commensurate with limitations imposed by handicaps. Fundamentally, this demands more than a structural reorganization and amplification of existing special education delivery systems, more than merely increasing the quantity of services, more than simply providing a wider range of educational alternatives to regular placement. It suggests a direction that views special education services as an essential support system in the continuous preparation of the individual for increasingly greater participation in the regular school program. Focusing on the attainment of successful participation in regular education experiences with "normal" children does not mean abandoning the usual, immediate progress goals of special education services. Rather, it means providing a criterion for determining the relative improtance of these goals, for assigning them priority levels, and for identifying, evaluating and selecting the methods, media, content, materials, and circumstances most conducive to diminishing existing restrictions on regular program participation.

In emphasizing the identification and implementation of teaching-learning events that include or lead to more active involvement in the regular activities of the educative process, the present adverse effects of "labeling" and concentration on student deficiencies and limitations can be changed to focus on improving qualifications, prospects, and opportunities for productive participation in specific aspects of the regular programs.

MAINSTREAMING: A DEVELOPMENTAL PERSPECTIVE

Mainstreaming is a point of view rather than a practice. It is a way of conceptualizing the individualized nature of the educative process. It encourages a potentially limitless variety of different practices and arrangements. It is a way of affording the handicapped with programmatic opportunities and exposures that foster their adaptability to the "normal" environment of living and learning. It is a problem of long standing that societal efforts to meet the needs of the handicapped have often been structured in a way that limits opportunities for acquiring the experience, knowledge, and skills necessary to cope successfully with the demands of life in the community at large. The developmental disadvantage of an atypical environment is that growth in adaptability is effectively limited, if not hindered by experiences that reinforce the handicapping effects of disabling conditions. In the regular educational environment, it becomes the function of special services to facilitate and reinforce adaptive responses to the "normal" learning climate and to encourage their transfer to other life and working situations. This involves not only support for the attainment of curricular objectives insofar as possible, but support for acquiring the means to put those attainments to maximum use.

Normalization and Mainstreaming Models

Mainstreaming models proposed by Reynolds (1962) and refined by others (Deno, 1971; Hehir, 1975; Reynolds and Birch, 1977) identify a cascade of educational services that describe a series of stages through which individuals progress toward greater and more fruitful exposure to the regular school program among normal peers. Along such a continuum of normalization, the relative extent of integration into the regular school setting, as well as the supportive services that may be required for maintenance at any particular level, varies. One extreme of the normalization continuum represents the totally institutionalized handicapped individual who is entirely removed from contact with normal peers and regular school programs. The other extreme is represented by the fully integrated handicapped individual who requires no more than the indirect services provided through a consulting specialist's advice and assistance to the regular classroom teacher (or others). Between these extremes are a number of variations.

(1) Full time regular class participation with frequent individualized assistance by the regular teacher, visiting specialist, aide, or classmates.

(2) Primary assignment to a regular class in conjunction with part-time attendance in resource rooms, separate tutorial sessions, special classes, or other special instructional situations.

(3) Part-time assignment to a regular classroom with or without direct, in-class special services, plus part-time assignment to a separate school with complete specialized service capability.

(4) Full-time assignment to a separate special classroom (a) located in a facility that also houses regular classes; or (b) located in a separate facility devoted exclusively to handicapped children.

The most significant feature of the fully implemented model is the objective of continuous upward mobility (in terms of increasingly escalated integration into the regular program). It is assumed that a handicapped child's educational progress on the continuum will provide as much integration with normal children and as much special service as one's individual needs require. It is also assumed that these provisions will be geared to the continuing program of learning-maturation that has been developed to facilitate the normalization process.

The Principle of Normalization

Normalization is not a new idea but its implications have not been explored deeply. It is a particularly fruitful notion because it focuses primarily on the interaction between the individual as such and his/her environment rather than on the limiting effects of handicap in the relationship between the individual and the environment. It has a positive quality in that it focuses on "normalizing" the handicapped individual's relationship to objects, events, and experiences rather than his/her behavior. Too often the usual diagnostic-prescriptive criteria for placing the handicapped focuses too intently on the remediation of deficits and the recovery of abilities. In other words there is, in much of what is done educationally for the handicapped, an implicit preoccupation with restoration to normalcy. Normalization, on the other hand, involves making available the means necessary to provide, facilitate, or improve immediate access to the benefits and life conditions ordinarily available to members of society at large. It means providing life (learning) experiences in a way that supports and enhances accomplishments, experience, position, and reputation, in accord with developmental need and ability. In short, normalization encourages as fully as possible a continuous and mutual adaptation of handicapped and nonhandicapped--each to the other. Yet it neither demands nor prevents the attainment of normalcy as a condition for access by the handicapped to benefits, services, or opportunities.

Normalization is a perspective on the development of the handicapped that suggests a number of major differences from those traditionally associated with the pursuit of normalcy.

(1) It encompasses a broader range of individually appropriate educational alternatives for the handicapped;

(2) It requires greater attention to the purposeful cultivation of assets as a means of acquiring a larger share of societal benefits;

(3) It directs attention toward accessible features of the educational environment rather than preoccupation with the barriers to integration;

(4) It directs all services to the ultimate objective of promoting integral membership and acceptance in the society and avoids, insofar as possible, perpetuating or intensifying reliance on separate or special services.

In attempting to develop and implement educational services in a manner consistent with the principle of normalization many factors must be considered: (1) the severity of a handicapping condition, (2) the nature of the limitations it imposes, (3) the performance qualifications of the child on a variety of different educationally relevant variables, and (4) the nature and magnitude of the expected educational benefits of any particular placement. It is commonly presumed that the less severe the handicap, the less restrictive an appropriate placement may be. Further, it is ordinarily expected that the less restrictive an individual's placement, the more closely his/her educational progress will approach that of normal peers. Assumptions or expectations based solely on the severity of the handicap or on the normalcy of the educational attainment are not the critical or proper determinants of placement decisions. Rather, placement criteria should define the immediate learning-maturation benefits to be derived from a particular educational environment. Furthermore, placement criteria must, by law, take into account the anticipated benefits of association with normal children; and placement itself must contribute, insofar as possible, to extending capacity for beneficial contact with nonhandicapped. In other words, in the placement of the handicapped it may not be necessary or reasonable to expect their educational progress to equal or approach that of their nondisabled peers. What is most essential is the potential of the selected placement, compared with other possibilities, for greater progress toward normalization of the child's life experience. The issue at stake in this matter is not whether the handicapped child satisfies the same criterion-referenced standards as his/her normal classmates and peers, but whether the placement selected for him/her is developmentally most promising.

The Developmental Dimensions of Learning-Maturation

In providing educational experiences for handicapped youth, it is not only necessary, but essential to consider their learning-maturation on a number of different dimensions. Mental, physical, social, personal, and vocational growth are important considerations in individualizing the educational program and in determining the placement of individuals in the school program. Establishing learning-maturation priorities and determining the most appropriate educational environment for their development are difficult decisions. In determining the potential benefit for a handicapped child in any special or regular education environment, an intensive study of the maturation of the individual is involved. In assessing the potential benefit of participation in a regular occupational education course, many different learning-maturation factors would require specific, individual consideration. In part the relevant factors would be unique to the individual nature of the student's handicapping condition. In part they would include also factors which cut across and commonly relate to different disabilities. Factors directly relevant to the placement of deaf students in the present study, for example, included the following.

Physical: extent of hearing loss, speech development, communication skills, physical needs, general health, body and health concepts.

Mental: academic achievement in the basic skills of reading, writing, mathematics and language development.

Social: Interpersonal skills and behaviors, participation in groups, study habits and attitudes, relations with peers and adults, social values and attitudes.

Personal: self concept development, interests, aptitudes, values, aspirations, personal qualities, temperament, motivations.

Vocational: knowledge about and understanding of the world of work; attitudes toward work and ways of working; work skills; work interests, attributes, and aspirations; work experiences.

Academic gains and growth in social skills may not for example, be facilitated to the same extent in any given situation. It may be necessary to weigh the advantages of cognitive development with self concept enhancement, with socialization, or with vocational development. In several instances of occupational education placement documented in this study, the need for socialization in a hearing environment was a primary factor. This, coupled with the individual's personal interest in an occupational course of study and its potential for facilitating the individual's learning-maturation, were decisive factors in the decision to mainstream in the occupational education center. None of the decisions were easy, and placements were considered carefully. Deaf educators, it was found, tended to weigh academic learning heavily and place an exceptionally high priority on mental learning-maturation. Yet, the sacrifice of optimal academic instruction at the school for the deaf and tolerance for inequality in the rate of progress between deaf and hearing at the occupational education center did, in one case, result in producing the first fully licensed, profoundly deaf cosmetologist in New York State. Similar individual instances of success were found among students enrolled in courses in office practices, food trades, automotive work, and data processing.

The benefits attributed by teachers, parents, and students themselves to the integrated occupational education experience range over all five learning-maturation dimensions. The most obvious of these is the acquisition of occupationally relevant knowledge and performance skills inaccessible in the separate special education setting. Specific accomplishments noted in social learning-maturation range from a change in attitude to changes in behavior. Some deaf students reported more favorable attitudes toward the hearing, while others reported more actual personal interaction with hearing individuals. Several deaf students indicated that they felt more comfortable and more secure in their interpersonal relations with the hearing. On the other hand, there was a group of students who, in the period of their participation in the program, were unable to establish either communication or friendship patterns with the hearing. These achievements, or lack of achievements, represent different levels of social learning-maturation and serve to illustrate the individualized and progressive nature of the normalization process. Other dimensions of learning-maturation were served as well. Some students reported increased self-confidence. Some teachers noted specific changes in concepts of self. Since deaf students tend to have lower self-esteem, any changes tending to promote a more positive self concept are worthy attributes. The types of personal growth manifested in the mainstreaming experience of these deaf students concretely illustrate the nature and extent of learning-maturation effects that can be achieved through the carefully considered placement of handicapped individuals in an integrated educational environment.

Normalization and the Teaching-Learning Process

One of the more common points of disagreement between proponents and critics of mainstreaming concerns the implications of what it means to provide the "least restrictive environment." Mainstreaming advocates are intent on changing the developmental inequities resulting from involuntary isolation from normal maturational experiences. The cautious and more skeptical critics are quick to identify the potential hazards to both the handicapped and nonhandicapped in the large-scale reassignment from separate or special facilities to regular classrooms. They fear the creation of indiscriminate "dumping grounds" for children who are unprepared for integrated schooling by unreceptive or untrained teachers. They point out that wholesale placements would constitute a "most restrictive environment" and limit educational development more severely than isolation or institutional placement. Some cite the adverse effects of mainstreaming on the quality of education in the regular setting, claiming that mainstreaming will imperil the educational opportunities of normal children by imposing an unacceptable or unproductive learning environment. The ill-effects of placing unprepared youngsters into inhospitable school environments, and the disadvantages to handicapped and non-handicapped alike of permitting indiscriminate reassignment must be acknowledged. The real task ahead is the active pursuit, discovery, and validation of strategies for creating "least restrictive environments," without adulterating regular educational practice or perpetuating unnecessarily the developmental inequities of separate special education.

From a developmental standpoint it is necessary for the mainstream environment to benefit handicapped and nonhandicapped alike. The advantage of association with normally developing children and participation in their developmental experience is the essential purpose for mainstreaming handicapped students. To accomplish that objective the environment must continue, after the introduction of handicapped children, to provide conditions that sustain normal developmental progress by nonhandicapped children. Otherwise, conditions conducive to the process of normalization would no longer exist. Many features of the learning environment are changed by the added presence of the disabled child. Modifications involving direct accommodation to a handicapping condition can create unfamiliar inconveniences, limit group activities, elicit negative attitudes and become a source of dissatisfaction. Envorinmental irritants, such as these, however, cannot be presumed without qualification to obstruct or diminish the development of normal children simply because they require unaccustomed or nontraditional variations in school practices. Human growth and maturation of all kinds - physical, intellectual, emotional, social, vocational - are a consequence of interaction with surroundings that are not exclusively serene, comfortable, or pleasant. Challenge, difficulty, failure, and frustration play an intrinsic and significant role in the process of development, and growth is promoted by experiences which "stretch" the individual's response capabilities.

On the other hand, fear of disadvantaging handicapped children by indiscriminate reassignment to the regular classroom has been cited by some in the fields of both special and regular education. The traumatizing effects of resentment and rejection by normal children, the debilitating exposure to continual reminders of insufficiency in intellectual ability and performance, and unfair competition between normal and handicapped are cited as reasons for preferring the acceptance, safety, comfort, and success experienced in segregated special education environments. Arguments in favor of the general practice of separate special education seem to stem from two equally unsupported assumptions: (1) that exposure to the superior performance of more normally developing children will adversely affect the development of exceptional children and (2) that the handicapped have specifically different developmental needs that are best served by different curricula under the direction of specially trained educators and in the company of similarly afflicted peers.

In viewing both the possibilities for growth and the potential for problems in the integrated classroom, it is necessary to consider separately the act of teaching and the act of learning in relation to the forms of adaptation each implies. Teaching engages the learner in the process of education. It involves providing the conditions, situations, and activities for the learner and adjusting the pace and sequence of the child's learning experiences. Teaching is not shaping, directing or controlling; but rather leading, exploring, and discovering. Teaching then is an activity which should be dynamic and personalized; not rote and mechanized. In the integrated classroom, as in any regular classroom, it is the teacher who adapts the environment (e.g., instructional methods) to accommodate the learning levels and learning modalities of the learner. To the extent that the teacher is able to adapt the act of teaching without vitiating the efficacy of the learning exposure, "normal" classroom activity is maintained. On the other hand, it is the learner, and in the integrated classroom the handicapped learner, who adapts to the normal learning environment. To the extent that the learner is able to relate and respond to the classroom tasks, learning, in the form of everchanging personal perceptions, relationships and meanings, will occur. For the handicapped learner as for any other student, learning, in the form of new meanings and relationships, results in new schemas and new responses. Through these new responses handicapped individuals learn to adapt to their environment in more productive and personally satisfying ways. In the gradual, mutually complementary process of teaching (adapting the environment) and learning (adapting to the environment) the goals of the normalization process can be achieved in the regular classroom.

In the integrated occupational education of deaf students it was observed that some deaf educators and regular teachers without mainstreaming experience were among those most skeptical about the ability of deaf students to cope with a regular program. Regular teachers who had experience with deaf students showed considerably more confidence in student adaptability. They acknowledged the difficulties imposed on students by the limited availability of special support services; and they did experience problems, especially communication problems, that limited their own effectiveness at times. Nonetheless, these instructors evidenced a high level of optimism regarding student ability to cope with these problems, along with confidence in their own capacity to adapt their courses of study and instructional practices to the needs of handicapped students. In fact, it was the opinion of many occupational education teachers that one of the major benefits of the cooperative program was the demands it placed on deaf students to display more independence, responsibility, and initiative in the pursuit of learning objectives. They believed that, however advantageous comprehensive special support systems might be in many respects, they were not without adverse effects on a student's educational development. These effects were sometimes described as the consequence of "overprotecting" deaf students by providing special services in a manner that relieved them of a sense of personal responsibility for learning. In effect, the teachers were noting an habitual dependency on support services that prevented many students from attempting to learn in the absence of special aids. The consequence, they felt, was the denial of opportunities for success by defending students too carefully from experiencing responsibility for failure. The support services they requested most frequently themselves were communication assistance and individualized articulation between content of instruction provided in the schools for the deaf and in the occupational courses of study (e.g., practice in basic measuring skills in math, strengthening technical vocabulary in language arts). It is noteworthy that occupational education teachers felt that the deaf students they taught were capable of satisfying more rigorous academic standards than their actual accomplishments would suggest. Though they recognized the importance of support services, as their own efforts to secure such services indicate, they believed that the services sometimes functioned to diminish the students' responsibility for academic affort and initiative instead of increasing it.

In effect these teachers were suggesting that they and their students were doing tolerably well under adverse circumstances. They did encourage greater availability of support services, particularly through greater responsiveness of special education services in the home school to individual deficiencies in skills required by occucational courses. Were this to be accomplished, they believed, student performance in occupational courses would be measurably enhanced.

This finding takes exception to the rather common belief that a major obstacle to mainstreaming is the inability or unwillingness of regular classroom educators to interact with special educators in a mutual effort to individualize adaptive arrangements for handicapped students.

Even under the most favorable mainstreaming conditions, most handicapped students will operate at a disadvantage compared to normal students. Their accomplishments are most appropriately evaluated, therefore, in relation to minimum performance standards and the difficulties which they must overcome in order to meet those standards. It would be unwise to expect exceptional accomplishments. The deaf students in this investigation, for example, tended, on the whole, to progress rather slowly and with considerable difficulty. Although the work they actually completed was often rated high in terms of precision, accuracy, and product quality, their performance rates and quantity of productivity tended frequently to be low, often below what teachers defined as "trade standards." However, most of these deaf students were performing regularly with their hearing peers for the first time in their lives. Any miraculous restoration to normalcy, however exciting the prospect, was not a necessary condition of their success. What was exciting was their responsiveness to the ordinary objectives of a regular classroom education situation. Teacher evaluations, acceptance by nonhandicapped classmates, and the satisfaction of both handicapped students and their parents are circumstantial indications that they were able to meet minimal standards of classroom performance without excessive strain on the adaptive capacities of the deaf students themselves or of others associated with the cooperative programs.

Considering the short time most of these young deaf people were involved with the occupational education program, as well as the academic weakness and communication difficulties with which they had to contend, their progress in the larger world reflects favorably on the mainstreaming efforts expended on their behalf. The emphasis on training in marketable skills, on cultivation of favorable work habits and attitudes under simulated employment conditions, and on behavioral adaptation to a hearing environment were learning-maturation exposures that would have been unavailable through the more restricted range of program options that exclusive attendance at the schools for the deaf would afford.

VOCATIONAL LEARNING-MATURATION

Work, in its many forms, is a central theme in every person's life. Whether individuals are concerned with earning a living, providing a community service, maintaining a home, or seeking pleasure in a leisure time pursuit, they are involved with work in some way. Since work consumes a major part of time and is a significant influence on how people think and feel, it is startling that so little attention has been directed at helping individuals learn about work and ways of working.

Vocational learning-maturation is often unattended or ignored because many educators think of it as a series of informational activities which will help individuals to "pick an occupation." There is a difference between vocational learning-maturation and occupational choice. Vocational learning-maturation, or career development, is a process involving orientation to work, the evolution of work values and attitudes, the development of work habits and work tasks skills, the cultivation of work motivations, and the assessment of work satisfactions. It is an evolutionary developmental process that begins early in life and extends over the life cycle. Occupational choice, on the other hand, is the act of identifying the available alternatives for work, considering their consequences, and planning for or pursuing one of them. While it is common to expect people to make an occupational choice in late adolescence or early adulthood, for many people it can and does occur at many points over a lifetime. Activities that reflect the traditional emphasis on the choice of an occupation in the late teens or early twenties are provided for young people with the intent of helping them to resolve the "What are you going to be when you grow up?" question.

Vocational Learning-Maturation--Process or Choice?

The classroom offers many opportunities for students to learn about and explore ways of working with data, people and things. Schooling is viewed most often as preparation for work. However, school is work and the school is a workplace where young people begin to develop work habits, attitudes and behaviors that will influence their later performance in the world of work. Much of what young handicapped learners experience during the early, formative years of elementary and secondary education will have a significant impact on how they adjust to the demands of a job in the marketplace. School can (and should be) a place where the handicapped can think about, explore, and experience their "self" and "self-in-situation" as an important and meaningful base for career building and life shaping. Their vocational learning-maturation, like that of their able-bodied peers, needs a reality base for exploring and testing. Carefully planned placements in the regular classroom with specified objectives can provide the types of real exposures and experiences that foster vocational growth and maturation.

In this study, administrators and pupil personnel workers regarded career development as an individual process and referred frequently to the importance of career information exposures. In varying intensity from site to site, they provided career education activities that included workers who came to the school to talk about their job, field trips to businesses and industry, career gaming techniques, and occupational information sessions. These activities were largely incidental and sporadic since none of the institutions had developed comprehensive career education programs. These activities culminated in a few interviews with a counselor who helped the individual to relate his/her interests to future educational goals or job possibilities. Helping these deaf young people keep their options open, learn about themselves, develop an awareness of job opportunities and make realistic plans were the essential objectives to be achieved. The goals of the programs represent concerns with both the "process of vocational learning-maturation and the "choice" of an occupation, although the planned program activities provided by the schools for the deaf focused largely on matters pertaining to "choice."

More unsystematic and unplanned were the "process" elements of vocational learning-maturation to which the deaf students enrolled in the occupational education centers were exposed. In their classes, they experienced the social forces and psychological factors that influence work role behavior, they encountered everyday the demands of on-the-job communication and its importance in job performance, and they dealt firsthand with the problems of a deaf worker in a hearing environment. For a majority of these deaf students, it was their first exposure to the simulated reality of the workplace.

Teachers in the occupational education center described vocational learning-maturation from a process rather than a choice perspective. They cited personal characteristics, especially those associated with work habits, and social behavior as important indices of readiness for work. On a day-to-day basis they were alert to the work attitudes, work behaviors and work skills of the deaf students as they approached their schoolroom tasks and responsibilities. These teachers used their position to make important judgments concerning the present level of an individual's work performance and his/her future experiential needs. While they did not contribute to the development of the IEP, they were able to make a significant and meaningful impact on the nature and direction of the individual's vocational learning-maturation.

Handicapped students mainstreamed in these occupational education classes were exposed to a range of work values and attitudes as these were expressed by their hearing peers. They were able to assess their own performance and compare their skills with those of their hearing counterparts. Being able to engage in regular day-by-day assessments of one's own performance and to compare one's strengths and weaknesses with others on a given work task can be a meaningful and motivational experience. They had an opportunity, with the guidance of their teacher, to identify more accurately how well they were performing. They could assess more acutely their strengths and weaknesses as they compared their skills with other handicapped and nonhandicapped students. They were learning how to present themselves and their work skills more effectively to potential and actual employers. That they were not as successful in obtaining employment after graduation as had been expected, is more a matter of their extreme need for these kinds of exposures, earlier and over a longer period of time, than of the quality of their two year experience in the occupational program.

School Is Work

In the years ahead, more emphasis must be placed on the "process" element of vocational learning-maturation. Students, as learners, are workers who engage in hundreds of work tasks over the period they are in school. Every work task in the learning process imposes requirements on the learner. These work task requirements involve a variety of work traits which are expressed by student workers in the performance of their schoolwork. Approaching schoolwork by identifying the work tasks to be performed is a realistic way of involving handicapped students on a day-to-day basis with the nature of the work they are expected to do. The classrooms, laboratories, playgrounds, kitchens, shops, gymnasiums, libraries, and offices are work stations where they can become aware of the ways they and other people work. With or without the help of their able-bodied peers, the school can provide real life work experiences that have a "here and now" quality. In these work settings, they not only learn about but actually engage in a wide variety of work tasks. In accomplishing the work tasks of the school, children can be made aware of the various work tasks they are required to perform. They can be encouraged to assess these work tasks with reference to their interest in the task (like-dislike), their involvement with the task (seek-avoid), and their ability to perform the task. The vocational learning-maturation process can be guided more explicitly as individuals are able to make assessments of their abilities and work preferences in different work settings and contexts.

The potential for helping handicapped students identify themselves as workers and to develop and to assess their work traits can be as varied as the school curricula allow. Interests, aptitudes, work situations, personal characteristics, physical attributes, and working conditions are important areas where vocational learning-maturation can and should occur. The students in the study population were only beginning to specify their interests in any detail beyond the level of "I like..." or "I don't like..." In the area of interests and abilities, for example, it was difficult for the deaf students to differentiate between an interest in a field of study and their ability to pursue it. Yet, they all had extensive academic experiences in mathematics, social studies, science and language. They were able to recite their grades in these courses as indications of their ability ("I get better marks in social studies than I do in English"). In their occupational training areas, they were beginning to differentiate among general work task activities. They could enumerate work task preferences and, in some instances, prioritize them. However, they were only beginning to internalize their learnings in any beneficial way. Being able to identify more specifically their work traits and preferences is an important attribute in vocational or educational decision-making or in presenting one's self to a potential employer.

A few examples of the different areas where vocational learning-maturation should occur are provided below. This list is illustrative only to suggest a few of the many worker traits that can be explored in the school program. These examples should serve to show how readily a course of study can be used to promote "self" and "self-in-situation" learning.

I. Aptitudes

- intelligence
- verbal
- numerical
- spatial
- form perception
- clerical perception
- motor coordination
- finger dexterity
- manual dexterity
- eye-hand-foot coordination
- color discrimination

II. Interests

- scientific
- mechanical
- musical
- agricultural
- crafts
- business
- language
- artistic
- mathematical
- literary
- performing arts

III. Work Situations

- directing other people
- performing under stress
- working independently
- meeting new people
- taking risks
- finishing an unpleasant job
- working closely with others

IV. Personal Characteristics

- persistence
- patience
- agility
- poise
- dependability
- neatness
- imaginativeness

V. Physical Attributes

- strength
- reaching, handling
- talking, hearing
- seeing
- climbing, balancing
- fingering, feeling

VI. Working Conditions

- inside, outside
- noise, vibration
- hazards
- fumes, odors
- dirty, dusty
- wet, dry

Since schools are expected to develop individualized educational plans for each handicapped child, being able to specify the work tasks of a learning experience represents an opportunity to provide for their work orientation needs developmentally. Individualized educational planning offers the school and the home opportunities for collaboration in developing a plan for vocational learning-maturation. Thoughtful consideration should be given to short-and long-term objectives that will challenge the individual child but which will not extend beyond his/her limits to accomplish the task of learning successfully. Carefully designed work tasks that require the individual to "stretch" his/her on-the-job performance contain two ingredients: (1) the work task should motivate the individual to work; and (2) the work task must be within the individual's capacity for achievement. The task-wise teacher will be able to determine how much the student can hope to achieve within the parameters of the learning episode. Through these classroom experiences, the handicapped child progressively attains higher levels of achievement. These accomplishments foster self-esteem, self-confidence, independence and autonomy--all desirable long-term goals in the education of all children. Helping handicapped young people develop feelings of "I can" (as opposed to "I can't") is a way of establishing a positive view of their capacity for work. This is especially significant in the mainstreaming classroom where handicapped youth can compare their success with that of their nonhandicapped peers.

THE COGNITION OF WORK

Every individual evolves his/her own cognitive schema of work. It is represented by what one knows about work and how one thinks and feels about it. As new information is assimilated and accommodated about oneself and one's environment, learning takes place. Moreover, in the process of modifying and extending the understanding of the self, one's world, and one's relationship to it, the individual is maturing.

The process of structuring and restructuring the way one percieves work is influenced by several life forces.

Developing concepts of self. Handicapped children have low levels of self-esteem. The reasons they have clusters of negative concepts of self vary among the different handicapping conditions but they are usually the result of "I can't" appraisals concerning their physical capacities, abilities or personal traits. As individuals make assessments of their interests, aspirations, health, life goals, work motivations, aptitudes, values, needs and work values, a picture of themselves emerges--a generalized self concept. Continuing appraisals help individuals to distinguish their uniqueness and to differentiate among their many concepts of self. Clearer concepts of self have more opportunity to emerge when individuals discover distortions in their view of self and examine discrepancies between the way they perceive their performance and the way they do, in fact, perform. Since the development of the self concept involves the reactions and evaluations of others, it is improtant that handicapped youngsters have access to successful work interactions in as nearly normal work settings as possible.

Forming concepts about work. Concepts about work and ways of working develop over a period of time. They are formed as individuals are able to manipulate and master the abstract or general information which is available to them. Young people begin to form concepts about work when they have opportunities to deal with abstract ideas and thoughts and to develop mental impressions. Language serves an important function in conceptual learning. Exposures introducing the vocabulary of work provide a framework for organizing and synthesizing one's experiences. For example, learning about "persuading," "precision work" or "computing" as ways of working can help individuals to manipulate what they know in making their own discoveries about their work preferences, work involvements and work skills. As they help in a garage sale, peddle goods door-to-door or sell tickets at a community function, they learn about work tasks that they can associate with their concept of persuading. Using the concepts they have formed can be helpful in making more refined discriminations among their interests, day-to-day work involvements and in making more precise assessments of their work performance.

Gaining work task experience. Experiential exposures permit handicapped learners to test their feelings about and behaviors in work roles and work role relationships. Through experiential episodes with other handicapped and nonhandicapped workers, individuals have an opportunity to clarify their feelings about work and work functions and to enhance their understanding of the interpersonal aspects of job performance. The work tasks inherent in the demands of school, the pressure of completing these tasks, and the conditions in which these tasks must be accomplished are a source of meaningful experiential learning. They can be as influential and as significant as real on-the-job performance. In the mainstreaming situation, carefully selected work situations designed to foster the short-and long-term objectives established in the IEP for each handicapped youngster can be arranged. In the natural work environment of a science laboratory, an industrial arts shop, a homemaking kitchen, a debate club or a student council meeting, both handicapped and nonhandicapped students as they work together, learn how to communicate and cooperate in the completion of a task or to creatively tailor a job task to maximize their individual capacities.

Obtaining occupational information. Informational exposures provide inputs of a factual nature and deal with expanding the individual's knowledge about specific work tasks and their requirements. Information about specific jobs in the world of work can be provided but such information, insofar as possible, has more meaning when it can be related directly to the actual work tasks of the classroom, home or community. The occupational informational needs of the handicapped, in general, are much the same as those of the nonhandicapped. However, handicapped children have need for additional specific information when the job tasks may require additional training or equipment to compensate for their handicapping condition. More importantly, handicapped youth need information which dispels many of the stereotypes surrounding the traditional group of occupational opportunities and requirements to which they are often referred. Handicapped people are frequently discouraged from examining an occupational opportunity because it is assumed "they can't do this job." Occupational information that expands their labor market options is needed desperately. They need information about on-the-job problems which they can expect to encounter. They need very specific information about the nature of the work task demands and the level of skill required to meet these demands. In the mainstreaming environment, handicapped youth should get a wider exposure to job information, should have opportunities to raise appropriate questions and to seek and find reasonable solutions.

Success in attending to the vocational learning-maturation process is dependent on home-school-industry collaboration in identifying work orientations and expectations that can be transmitted through a unified and concentrated effort. Parents need to be informed about the work expectations of the school and of the labor market employer. Some will need help in determining how they can foster positive work attitudes and work behaviors. Business and industry need to specify the work attitudes and work behaviors they seek in employees and the school needs to contribute to the development of those work orientations within the work settings and work expectations of the school curriculum.

In establishing clearly and specifically work expectations of the home, school and community, young people will have a framework for the development of their work attitudes and values, a standard of work performance (one that is not based on school marks), and knowledge about and experience with a large repertoire of work tasks and work skills. Within this framework all young people can grow. Handicapped youngsters in the regular work settings of the school will learn about and experience the same set of work expectations as the non-handicapped. While it is necessary to account for any actual limitations imposed by a handicapping condition, the disabled child will be expected to "stretch" him/herself in testing the uppermost levels of his/her capacity for work achievement and success. Through such normalizing experiences handicapped youth will learn how to accommodate to the work setting. They will learn how they can adapt to work and how to create change in work routines. Job task accommodation ("job tailoring"), as a major change in job functioning or as a modification in day-by-day routine, should be a part of their job performance repertoire --working day-by-day with the handicapped youth to feel more comfortable in their associations with them. It should reduce feelings of discomfort or anxiety and improve communication. As they are able to relate more naturally and spontaneously to each other, we are truly building a world where people can and will treat each other as equals.

Mainstreaming for vocational learning-maturation, within the normalization concept, is a condition that allows the handicapped person to "stretch" and "grow" not only while he/she is in school but for a lifetime. Given thoughtful placements, instructional support and time to explore the potential benefits for all, mainstreaming, for many handicapped children, and the nonhandicapped as well, can be a worthwhile educational endeavor.

SOCIAL LEARNING-MATURATION

Peers serve an important function in children's social learning and development. Available evidence suggests that children learn morals, social rules, conventions, and norms as well as a variety of cognitive, motoric, and social skills from peers. Furthermore, it appears that the function of peers in the socialization process can not be duplicated. Peers provide children with a variety of learning experiences which differ from those encountered through contacts with adult socializing agents such as parents and teachers. Given the formative value of peer relationships, it is important for children to have the opportunity to interact with age-mates and establish a comfortable position in the peer group.

From a developmental standpoint, peers serve both an informative and experiential function in children's social learning. The opportunity to observe peers informs children about the behavior of others, about events that affect their lives, and about their response to those events. Experiential involvement with peers provides children with opportunities for attempting and testing social behaviors about which they have acquired informational knowledge. Peer interaction also contributes to social learning and competence both by enabling the child to learn to manage his own behavior appropriately in social situations and by informing children about the consequences of their own behavior. Observing response outcomes permits children to engage in social comparison and self-regulation processes from which inferences may be drawn about the effects of their own behavior on peers. Differential response outcomes may also encourage children to identify the behaviors in their social repertoires that peers value.

Educational intergration with normally developing children, may help to promote and establish the social development of handicapped children by exposing them to the social realities of the "normal" environment and freeing them from the limited range of social encounters ordinarily available to handicapped children. Ideally, this type of educational experience serves a reciprocal function, also contributing to the social learning and development of normal children. Informative experiences and opportunities for social interaction with handicapped peers at school may stimulate the development of realistic understanding and of accepting attitudes toward the disabled. Proximity and interaction with handicapped peers may desensitize unfounded fears or psychological constraints that distill and perpetuate prejudicial beliefs. These circumstances may also encourage the development of constructive social skills necessary to build lasting social relationships. Evidence obtained in the present investigation indicated that a positive social climate and opportunities for peer interaction did emerge for handicapped students in the integrated settings. This in turn was associated with immediate positive social outcomes for most participants (e.g., deaf-hearing friendships, constructive changes in interpersonal attitudes and behaviors).

Extensive classroom observation and interview evidence confirmed the theoretical prediction of a gradual increase in the extent of positive social interaction between hearing and deaf students in the occupational education classroom. They managed to overcome obstacles to communication in a variety of spontaneous and inventive ways, established friendly working relations with one another, and in many instances formed friendships. According to many of the deaf students, enrollment in the cooperative program marked their first exposure to sharing educational experiences with hearing students. They admitted that they found it "scary" at first and fraught with adjustment difficulties. They felt unsure about their ability to approach hearing peers; and without orientation to the behavior of hearing students, they lacked a basis for anticipating the reaction they would receive. Nonetheless, many of the deaf students looked upon their entry into an occupational education course as an opportunity to learn how to "get along in the hearing world", particularly in work-related environments.

One basis for establishing friendships between deaf and hearing that surfaced early in the occupational education experience was the interest and curiosity of the hearing students about sign language. Some hearing students even made systematic efforts to learn sign language from deaf classmates. Another source of friendship formation was the deaf students' need for assistance. In the regular, day-to-day performance of class work they learned to seek the help of hearing students. In many cases hearing peers, as they became more aware of the needs of the deaf, began to anticipate requests for help and volunteered assistance. As a result, the students learned how to offer, ask for, and accept (or reject) one another's help.

There were instances of non-acceptance and lack of understanding. Teasing and tormenting did occur in some cases. Only a few deaf students, however, were unable to cope with occasional anti-social responses from hearing students. Most learned to ignore it, tolerate it, or respond to it.

Hearing students reported feelings of acceptance toward the deaf in the occupational education setting and indicated that misconceptions they may have harbored about the deaf were dispelled by their deaf peers. Although they may have avoided initiating social contacts with hearing-impaired students at first, they learned to approach the deaf, to communicate with them reasonably well, and to help them. As a consequence, hearing students became the initiators of interaction with deaf students with a frequency that increased continuously throughout the school year. Sociometric data collected annually during the course of the study also confirms the inclination of hearing students to perceive and to treat deaf peers in much the same way as they responded to others in their classes.

Many of the contacts between the hearing and deaf students were work-related, as one might expect. They worked side-by-side, exchanging tools, giving directions, asking questions, helping one another as the need arose, talking and joking with one another, and sometimes provoking one another--behaving much the same as co-workers in the workplace who share job responsibilities and activities. In general, they learned to work well together. Follow-up data on program graduates showed that the deaf students found it easier, as a result, to contend with the social aspects of the post-graduate job environment. While graduates experienced a variety of on-the-job adjustment problems, adverse social relationships with co-workers was not commonly one of them. In fact, employers frequently remarked on the social skills of deaf employees as one of their unanticipated assets.

While the impact of classroom socialization on the self-concept was not an explicit object of inquiry in this study, informally gathered impressions suggest the effect tended, on the whole, to be positive. Expressions of increased self-confidence and evidence of greater self-reliance seem to be associated with positive interpersonal relations between deaf and hearing. Many of the deaf students initially felt that it was their deafness that prompted the reactions of hearing students toward them. They eventually recognized, however, that their interpersonal successes or failures were more a function of their personal qualities than of their deafness. This reassuring experience would certainly afford a basis for building self-esteem and a sense of personal worth.

The implications of these findings are far reaching in terms of the handicapped student's personal development and career maturation. Educationally, the integrated milieu can provide the social curriculum and the life skills training needed to develop mutually satisfying interpersonal relationships with others.

At the same time it provides a "laboratory" in which the individual can "experimentally" test the effects of putting new social knowledge and skills into practical use.

Effective social skills, reasoning, and knowledge are prerequisites to successful acquisition of job roles and the formation of productive work relationships. The world of work imposes on the worker a serious responsibility for adhering to social conventions that govern relationships with employers, co-workers, customers, and others. The workplace, moreover, has little tolerance for those who cannot or will not adapt to those conventions. The disabled person, therefore, who attempts to enter employment without having had sufficient opportunity to understand, accept, acquire and practice social behaviors expected of workers suffers a severe, and potentially chronic, employment handicap. It is unrealistic to expect inexperienced youngsters to develop the competence necessary to cope with the social demands of the job environment without both guided learning and ample opportunity to practice what he learns.

Several features of the cooperative occupational education programs served to promote fulfillment of employment-related social learning objectives. Guided learning activities included formal and informal instruction regarding social attitudes and relations, clarification of teacher expectations regarding work-related interactions, reinforcement of cooperative work behaviors, emphasis on cultivation of work habits and attitudes, encouragement of initiative and self-sufficiency, and insistence on careful attention to assigned responsibilities. Direct experiential learning was promoted by structuring the social aspects of classroom activities in conformity with those of the work environment. It was a common practice to group students in ways that facilitated or required cooperative completion of work tasks. Activities were also often arranged in a manner that enabled more socially competent students to serve as informal role models for others. The supervisor-worker relationship was often effectively simulated by one-to-one instruction and demonstration and by evaluative or corrective responses to work activities.

In addition to the direct teaching of social behaviors and explicit simulation of workplace conditions, other aspects of the occupational classroom indirectly contributed to the creation of social learning opportunities. Perhaps most notable in this respect was the emphasis on criterion-referenced evaluation of individual work performance. Inducements to competitive performance that accompany normative evaluation were, for the most part, absent; and students were able to engage in cooperative exercises without competing with one another for recognition and reward. Structural features of the physical environment of the occupational classroom may also have had an indirect, but potent, effect favoring both cooperative social behavior and the opportunity to recognize its effect on the accomplishment of class work objectives. The social learning effects to which the occupational classroom experience of deaf students were conducive remain largely conjectural. However, actual classroom observation data is highly consistent with such explanations. Favorable attitudes and cooperative interactions between deaf and hearing students were actually quite common. The evidence gathered tends to indicate that the success of deaf students in becoming socialized to the integrated occupational education classroom was in part spontaneous and in part a function of favorable environmental conditions. There appears to be good reason to expect positive social outcomes when the structure of the mainstream environment itself does not interpose obstacles to their accomplishment. It remains extremely important, however, to evaluate the conduciveness of classroom settings to the social success of mainstreamed students.

Moreover, in individual instances of failure to make an adequate social adjustment, it may be necessary to make more carefully planned and systematic use of opportunities the environment presents for social learning. In other words, it may not be enough in some cases for the occupational education environment to be consistent with and conducive to the development of work-related social skills. It may be necessary to identify and concentrate more explicitly on modifying the specific social behaviors of individual students through a more controlled use of the social learning function of the occupational education experience.

DEVELOPING INDIVIDUALIZED EDUCATIONAL PROGRAMS

Public Law 94-142 mandates an individualized education program (IEP) for each handicapped child. The contents of the IEP shall include (1) a statement of the present levels of educational performance, (2) a statement of annual goals, including short-term instructional objectives, (3) a statement of the specific educational services to be provided and the extent to which the individual will be able to participate in regular educational programs, (4) the projected date for initiation and anticipated duration of the services to be provided, and (5) appropriate objective criteria and evaluation procedures and schedules for determining whether the instructional objectives are being achieved.

The normalization of educational experience for the handicapped student relies solely on the ability of administrators, pupil personnel service staff and instructors to prepare a realistic IEP. Two components are the heart of the IEP: (1) statements that characterize the individual's present level of development from the standpoint of personal, social, academic, and vocational learning-maturation and (2) statements that project in behavioral terms short-term learning-maturation goals that "stretch" (or challenge) the individual's present functional capacity. Findings have indicated that thus far teacher-prepared IEPs have been dominated by simple curriculum description, devoid of individual considerations. It is clear that IEP preparation remains a task which teachers are ill-prepared to perform in accordance with the purpose and function accorded to the IEP by P. L. 94-142. For the most part IEPs prepared for students in the cooperative programs associated with this investigation have been detailed topical outlines of academic courses taken by the students--identical in content for all individuals assigned to the same course without reference to the specific qualifications or deficiencies of the student for whom the plan has been written. The distinction between annual goals and short-term objectives tended to be unclear in most of the documents, and neither the progress expected of individual students nor the means by which it was to be sought were described, Moreover, IEPs rarely addressed any goals other than the purely cognitive outcomes of academic courses on students' programs. Enrollment in occupational education courses was mentioned in each case, but career education and career development objectives, along with personal and social development considerations, were omitted. The implication of these observations is that teachers still require help in becoming familiar with the intended function of IEPs and assistance in acquiring the skills necessary to draft them. Because the responsibility for developing and implementing these documents is a new and unfamiliar one, and because adequate guidelines for their preparation have yet to be effectively communicated, a great deal of uncertainty and confusion has been found among those most directly responsible for writing and implementing IEPs. Nonetheless, the intended clarity with which individualized plans articulate each child's unique qualifications and limitations, his/her needs and educational potential, is the key to the eventual success or failure of mainstreaming efforts.

Only through such careful analysis will it be possible to define and create the conditions under which the appearance of achievement will actually represent real developmental progress toward the attainment of unfulfilled educational objectives. Handicapped youngsters, like their nonhandicapped peers, may be expected to respond best to learning objectives which challenge their capacity to perform. It is the role of the IEP to identify experiences that combine three essential requirements for promoting developmental change:

(1) The abandonment of redundant repetition of tasks a child already performs easily or effortlessly:

(2) The avoidance of performance demands that severely tax or greatly exceed the limits of the individual's present capacity;

(3) The supportive presentation of opportunities to "stretch" the limits of present achievements to a new, but attainable, level of performance.

It is possible, under these conditions, to promote not only continuing achievement, but tolerance for the temporary frustrations and occasional failures that accompany many learning experiences. It will take time and experience for classroom teachers to acquire the skills necessary to prepare an IEP that draws on the past achievements and extends present performance parameters in a manner that demands the students' best effort.

Comparison of IEPs prepared in successive years does indicate some progress toward the increased expression of educational goals and performance criteria in more behavioral terms. However, this trend appears limited to curricular content of the academic programs. The personal, social, and vocational dimensions of learning-maturation were rarely mentioned in an IEP. Although evidence was found that such matters were discussed in meetings of school personnel and in parent conferences, their translation into operational goals and incorporation into an IEP did not result.

To fulfill its function properly the IEP should reflect more than the past and projected academic achievements of the individual. It should convey vocational information related to the development of worker traits, work attitudes, interests, aptitudes and skills. Many IEPs did note students' post-secondary career goals or educational aspirations. However, IEPs reviewed in this study ignored annual or day-to-day goals related to the improvement of the student's work habits or attitudes; and, as the follow-up of graduates indicated, many students experienced more difficulties on the job as a result of tardiness, irregular attendance, and other attitudinal problems than they experienced with the actual skills required to perform job tasks.

Establishing goals that enable handicapped students to "stretch" their abilities on the academic, vocational, and social dimensions of the learning-maturation process can also have a decided impact on the development of a realistic, favorable self-concept. The accomplishment of difficult tasks--reinforcing a sense of capability--is not less satisfying and stimulating for handicapped individuals than for their non-disabled peers. It is also particularly important to avoid endorsing, through educational experiences, a sense of personal identity that equates the self with limitations imposed by disability. For this reason it is necessary to distinguish between excessive performance demands accompanied by pre-ordained failure and challenging opportunities to complete difficult tasks. Without considering such factors explicitly in the preparation of IEPs there is little likelihood of avoiding the extremes of either overprotection against "stretching" a child's achievement potential or subjecting the child to the discouraging effects of inevitable failure.

Deaf educators displayed throughout this study an intense dedication to their responsibility for developing academic skills. Enthusiasm for academic priorities was not always matched by complementary attention to other dimensions of development. Enrollment in occupational education courses was often described as an ill-advised interruption of academic training, and students were, on occasion, counseled against enrolling in occupational courses of study because of their presumed interference with academic growth. Although, on the average, students pursuing academic programs were academically superior to occupational education students, and in spite of interpretative difficulties arising from year-to-year variation in standardized test administration, the *rate* of progress on standardized measures of basic academic skills does not actually appear to have differed greatly between programs. This suggests that at least those students who were enrolled in occupational courses did not suffer a great relative academic disadvantage with respect to the variables measured. It would appear that the essential advantages of the academic programs at the schools for the deaf were not seriously diminished or eliminated for these students, generally speaking. This is, however, a factor in the evaluation of educational progress that must also be evaluated on an individual basis. Individual instances of a notable decline in the rate of academic progress were noted. Whether this was attributable to the diminished availability of academic instruction that accompanied participation in the cooperative program is not clear. However, even when such cases do arise, it is important to evaluate the disadvantage of decreased academic progress against the developmental advantages of the cooperative program in the domains of personal, social, and career maturation. The question which must be addressed in individual cases is whether the trade-off between decline or slower growth in academic achievement and growth observed in other developmental areas can be justified. If such gains are, in fact, attained without severely retarding academic progress, it seems reasonable to accept the trade-off. On the other hand, if a decline in academic achievement is disproportionate to the advantages of the cooperative program, there is reason to question the student's placement. The project's data on academic progress suggests that fears for a general decline in academic achievement rates, due to participation in the cooperative program, would be misplaced.

Students interests were an important factor (e.g., following precise directions, performing under stress, influencing people, attending to detail) in making occupational education placements. However, aptitudes, work values, work-related preferences (e.g., confidence, neatness, accuracy, patience), were not considered in any systematic way as a part of vocational assessment. Though any placement may have at least purely exploratory value, vocational assessment data can be helpful, even if it is not always essential. Where there are quotas on enrollments, for example, or where there is some urgency about optimizing the appropriateness of course placements, it seems important to facilitate enrollment of young people in programs where they have an opportunity to succeed, where satisfaction can be achieved, and where aspirations can be realistically encouraged. The multioccupational program available to the students in one of the four research sites provided for a variety of exploratory experiences. Such a program offers excellent opportunities for handicapped individuals to test by direct experience a wide range of work traits, interests, and aptitudes. These kinds of experiences, carefully designed and documented, can provide extremely valuable assessment data for counseling, decision making, and in planning and implementing IEPs. It should be noted, however, that this multioccupational program operated within the expanded framework of a three-year sequence. This afforded students a year of exploratory experience under circumstances that eliminated decision making urgency. Upon completion of the "multi-oc" year, time and opportunity remained for a student to complete a full, two-year occupational course of study.

Parent involvement in the evolution of the IEP should be continuous. Parent participation, in most instances, was both sporadic and passive. The evidence seems to suggest that, in general, parents feel either anxious or obliged to transfer their care-taking and decision-making responsibilities to the schools for the deaf. It is, moreover, admittedly difficult for the schools to engage the cooperative involvement of unwilling, apathetic, timid, or fearful parents. Some parents, however, feld inadequately informed and limited in their opportunities to influence educational plans and decisions affecting their children. They were called in when problems, usually behavioral, occurred. They felt inadequately consulted for information conducive to a better understanding of their child's abilities, interests, or needs (particularly in the social, personal and vocational dimensions). Consequently, though a few parents expressed concern over lack of involvement, many more parents were content to have the school make decisions for them. A few parents, when irate, would contact the school to express dissatisfaction over treatment of their child. Such circumstances, however, do not offer the most productive opportunities to discuss a child's progress or optimal conditions for cultivating close working relationships. It appears that much remains to be done to induce parents to take a more active and responsible role in the educational life of their children. Although the schools would have great difficulty in overcoming individual instances of stiff parental resistance, the IEP process could become a highly effective basis for mediating cooperative efforts between school and parents.

The development of the IEP is not in itself the solution to all the problems of educating the handicapped either in the mainstream or in separate special facilities. However, it certainly represents an enourmous advance over standardized curriculum concepts in attempting to define the educational needs of the handicapped and regulate efforts to meet those needs. As most educators would explain, they assess student needs and performance informally day-after-day and year-by-year. Unfortunately, informal assessments are rarely translated to program goals in ways that can be specifically and systematically evaluated. Accountability is still a nebulous concept and operationally it is very loosely administered and monitored. The IEP is one approach to insuring explicit definition of needs and goals, careful surveillance of student progress, as well as a concerted and uniform approach to assessment of the effectiveness of projected program goals.

GEARING UP THE MAINSTREAM STAFF

Individualized education is a widely accepted ideal of educational practice. The problems that teachers experienced in developing IEPs at the secondary level provided some indication of the difficulties that are being (and will be) experienced as more and more handicapped young people are enrolled in regular classrooms. As schools across the land engage in some form of mainstreaming, administrators and supervisors need to consider and provide for the needs of teachers.

Assessing staff attitudes toward the handicapped. Teachers who are unfamiliar with the different handicapping conditions or who have never worked with a disabled child are quite apt to be apprehensive about their ability to accommodate the handicapped individual in the classroom. Many teachers, too, have acquired common stereotypes and/or myths about handicapped people. Since the attitudes and beliefs of teachers greatly influence their approach to the teaching-learning process, it can be helpful to assess what they know about the handicapped and how they feel about working with them. Knowledgeable personnel in the system and educators who have specialized in the education of the handicapped can help to plan activities and identify assessment procedures that can be used with members of the school staff. It can also be helpful to determine what nonhandicapped students believe and how they feel about associating with disabled children in their classes. This information can be used to identify activities that will help to reduce some of their misunderstandings, counteract misinformation, facilitate favorable attitudes, and contribute to mutually beneficial interaction between handicapped and nonhandicapped students.

In-service training. Through in-service training, teachers can be provided with information and experiences that will reduce their anxiety about teaching the handicapped and improve their effectiveness in the classroom.

Helping them to understand handicapped children and familiarizing them with the nature and effect of handicapping conditions is one basic in-service objective. Through units of study designed to provide accurate and up-to-date information and to challenge stereotypic beliefs teachers can become involved in expressing their views and raising questions about them. Even before the teacher begins working with the handicapped, it is possible to set the process of attitudinal change in motion. In fact, it is to be hoped that doing so would help to alleviate the anxieties and tensions that might otherwise diminish the teacher's ability to work effectively with the handicapped child.

Teachers are inclined to the practical. They want "how to do it" help. Materials and techniques that will work in instructing the handicapped is, perhaps, the most important link in the in-service effort. In the integration of deaf students upon which this study focused, for example, communication with the deaf learner was assumed to be a major problem for classroom teachers. In order to promote effective communication, therefore, in-service courses in sign language were provided. Yet, teachers, with few exceptions, avoided sign language in favor of pointing, mime or gesturing as the main means of communicating with deaf learners in their classrooms. On the other hand, provisions for helping teachers acquire other instructional techniques that would enhance visual learning were rare. Many teachers, for example, could have learned more effective overhead projection techniques and enhanced the benefit of their presentations, not only for their deaf students but for the entire class.

Familiarizing teachers with uncomplicated ways to modify equipment or alter facilities alerts them to the possibility of increasing participation by the handicapped in the work and activities of the entire class. However valuable the specific content of such experiences may be their principal benefit would be to encourage habitual sensitivity and responsiveness to the existence and nature of obstacles to maximum participation by their own handicapped students in class activities. To accomplish this objective, therefore, such in-service experiences must be designed more to exemplify effective initiative in devising adaptive strategies than to train teachers in the use of a precisely defined and limited set of handy techniques.

It is equally important that nonhandicapped students learn from teacher example to exercise the same kind of consideration. Tailoring the equipment in a classroom or showing consideration for the limitations of others need not disadvantage the accomplishments of the normal learner. Quite the contrary, it is an essential feature of the normal child's socialization to a school environment that promotes equitable treatment for all children.

Experienced classroom teachers participating in this study did discover through their own ingenuity how hearing students could benefit their own learning in the process of helping the deaf learner. Peer teaching, the simple process of assigning a capable hearing student to review, demonstrate, or instruct a deaf student was employed frequently. Hearing students who fulfilled this teaching function did not view it as an infringement on their own progress. In fact, they reported that it helped improve their own understanding of the material. Peer pairing, having a deaf student work with a hearing student, was another effective, mutually valuable technique that teachers utilized. Familiarizing teachers with practices such as these in the inservice program can attune them to possibilities for effective innovation in their own classes.

As teachers within a school system or cooperative program gain experience, they can become an integral part of the in-service effort. They can, for example, contribute to the preparation of slides, video tapes, or other audiovisual materials for use with teachers, parents or community groups. While it is very important to provide in-service when a system is gearing up for mainstreaming, it should also become an ongoing facet of the total staff-education effort. From the standpoint of cost-effectiveness alone, the mainstreaming movement will have to promote and rely on the development of effective communication among those who share mainstreaming responsibilities and interests.

COLLABORATING WITH PARENTS

The role of parents in the normal educative process has always been an enigma. It is widely recognized in theory, though not always accepted in practice, that without their knowledgeable support, cooperation, and active reinforcement the effects of professional efforts on behalf of students are diminished. Yet, it is not uncommon to hear educators bemoan "interference" by parents who take an active role in the educational development of their children by attempting to alter and influence educational practice. The ambivalence associated with parental involvement can be particularly pronounced in relation to the education of the handicapped child. Of necessity, parents of the handicapped more often come in contact with the school, and educators responsible for services to exceptional children are particularly vulnerable. They are convenient objects of the dissatisfaction of parents already overwhelmed by their own frustrations, unhappiness, and fears for the future of a disabled child. Professional educators in regular school settings can expect far more involvement with parents of the handicapped as IEPs are written and reviewed, and as the anticipated expansion of mainstreaming begins to materialize.

In the past, active parental participation in planning educational programs, reviewing their progress, and evaluating their outcomes has been relatively rare. The parent role has tended to be largely that of the passive or acquiescent cooperator, or, in instances of dissatisfaction, that of the unrelenting critic.

In recent years that has been a surge of recognition for parents' discretionary right to be consulted and to collaborate in the educative process.

This turn of events has been particularly affected by cases ajudicated in favor of parents contesting that practices used in assigning special status and special placement was unvalidated and arbitrary. Most recently, P. L. 94-142 has taken a step beyond mere acknowledgement and specification of parental rights. The language of the law implies for parents (and in "appropriate" instances for the child himself) responsibility, shared with the schools, for a part in decision-making. Parents are now accorded a legally sanctioned partnership role in (1) identifying handicapped children who require special attention, (2) planning individualized programs for them, (3) monitoring progress, (4) assessing results, and (5) program revision. Involvement in such matters may occur either by official appointment to serve on district Committees on the Handicapped, or more commonly, in representing the interests of their own disabled children. In addition, it is altogether likely that mutual interest groups, capable of exerting powerful, if unofficial, influence through sheer strength of numbers and a common purpose, will multiply. A new, and exciting opportunity exists for striking an effective coalition among interests in regular education, special education, and the parent-community.

This places a heavy burden on professional education. Professional educators are now bound by law to encourage and facilitate the participation of parents in program development and decision-making. There is no doubt that educators are being required to share, if not surrender, prerogatives which they have guarded carefully in the past.

Parents are sensitive to both the advantages and disadvantages that attend classification of a child as handicapped. They recognize the need for special provisions for their son or daughter, if educational attainments are to be maximized. They are also keenly aware, however, of the constraints that special status imposes on the child's opportunities for "normal" personal, social and intellectual development. For this reason they exhibit, in many instances, ambivalence at the prospect of either special placement or mainstreaming. While the special class or special school holds the prospect of optimizing cognitive growth, it evokes serious concern over isolation from the socializing effects of the regular classroom. On the other hand, it is feared that the regular classroom may be destined to compromise academic achievement in favor of personal development and socialization. Some parents fear that mainstreaming may result in the abandonment of the handicapped to a confusing, frustrating and frightening array of unattainable intellectual demands, accompanied more by social misunderstanding and ostracism than by integration into a climate of social normality. Though deep parental concern exists for provision of favorably balanced maturational experiences, skepticism mars the hopes of parents who speak most articulately about it.

The advantage which parents overwhelmingly attributed to mainstreaming in occupational education was the anticipated combination of skills development and social learning, principally insofar as it would result in eventual employment. Educators who were interviewed, both in occupational education centers and schools for the deaf, evidenced a distinctly different perspective. They stressed as distinct, immediate ends in themselves the social benefits, cultivation of work habits (rather than skills), and development of values and attitudes. Relatively few emphasized either employment goals or employability as primary objectives of the training experience. Such sharp differences in perspective on educational outcomes are matters of considerable importance. As procedures and policies designed to fulfill legislative mandates materialize, and as parents become less hesitant to take initiatives suggested by an expanded role definition, contrasts such as these, or one comparable to them, are quite likely to surface in planning, negotiating, and evaluation conferences. If unanticipated and unprovided for, their emergence can greatly increase the likelihood of misunderstanding, dissatisfaction, and conflict. One unfortunate and often unnecessary outcome might very well be an increased rate of appeal for formal hearings; the necessity of arbitrating differences in adversary fashion, through formal exercise of due process; or, in extreme cases, through litigation in the courts.

Home-school collaboration in the future can be characterized as follows: Parents are invited personally (not summoned) to discuss, in advance when possible, an impending referral of any kind. They are actively encouraged to consider their participation not as a legal formality, but as a relevant, constructive, and valued contribution to the child's development. Alternatives are explored with parents in advance of all decisions, emphasizing that individualization of services according to need is possible and important. Advantages and disadvantages of alternatives are weighed and evaluated with them. Parents are encouraged to visit, experience, discuss, and evaluate in advance of referral any services for which referrals are being considered. Progress reports on all pending decisions are made frequently, as are the review of plans already formulated and the evaluation of services currently provided. The importance of their collaborative initiative is continually stressed.

There is an advantage, not immediately evident perhaps, but nonetheless significant, in practices that focus parental attention on the continuous nature of efforts to satisfy the child's most immediate individual needs. It diminishes the tendency to draw sharp distinctions between special education and mainstreaming as mutually exclusive alternatives. Parental anxiety and ambivalence, often associated with the prospect of "mainstreaming", may be, in many cases, attributable to over-identifying the child with a handicapping condition, and unnecessarily attributing global educational disability to its effects. Preserving from the beginning, where possible, the child's identification with any aspect of the regular learning environment may provide for the parents, as well as the child, a pivotal point around which integration may be broadened without excessive fear. The principal cost to the school, in committing itself to encouraging and sustaining parental involvement, is time and effort. The benefit is the satisfaction and support of an important and increasingly powerful constituency.

Contacts through interview and questionnaire with parents of deaf students mainstreamed in occupational education tended to confirm the importance of parent involvement. Overall, parent reaction to their children's mainstream experience was favorable. Indisputably, very few parents exhibited strongly negative feelings of a highly specific nature. On the other hand, probes designed to determine the basis for parental views on the advantages and disadvantages of mainstreaming elicited the fact that parents, on the whole, were simply uninformed. Their "satisfaction" rests almost entirely on the presumption that their expectations were being fulfilled. The basis for that presumption was largely the absence of evidence to the contrary. This situation, of course, was not necessarily or exclusively attributable to the schools--either the schools for the deaf or the occupational education centers participating in the mainstreaming project. It is not at all unlikely, however limited or extensive the school's parent-relations program, that parents failed to take advantage of opportunities that did exist. Geographic distance of parental homes from residential programs alone represented a serious obstacle to communication. That location was a factor is evidenced by the higher rate of parent contact and parent involvement in planning at the one non-residential research site in the study.

Specific indications of the extent to which parents were out of touch with their children's educational experiences were many. Many were confused or uncertain about the process by which a son or daughter was initially enrolled in the mainstreaming program. Though most parents indicated some participation in pre-enrollment discussions with a representative of the school for the deaf, a majority could not recall obtaining detailed information about the occupational education center, its program in general, its courses of study, or support services available for the handicapped. Virtually all parents professed continued ignorance in these matters. Only a few parents were able to recall direct, personal contacts with the occupational education centers and only a few reported receiving any information at all from occupational education centers. This may have resulted from the fact that, in general, communication with parents was mediated almost exclusively by the schools for the deaf and there was a tendency for these communications to concentrate on educational responsibilities exercised by the school for the deaf.

Parents cited the need for more individualized planning and evaluation and for more frequent and effective communication with them. They left the impression that, with nowhere else to turn for assistance in the task of preparing disadvantaged youngsters to cope with the strenuous demands of adult life, they felt obliged to trust in the efficacy of school recommendations. At the same time many would, with encouragement, apparently welcome the opportunity for more information and a more active role in the educational development of their children. At least they say they would.

The role of the counselor, and other helping services personnel, is crucial in any effort to extend or expand the school's parent-relations activities. By training and temperament the counselor should be more sensitive and responsive to the issues requiring mediation. Individual teachers may themselves need help in perceiving, establishing, and sustaining relationships among the regular and special resources mobilized in mainstreaming. Those burdened with the details of administration are unlikely to have the time or the patience for undertaking elaborate coordination of relations between individual homes and a wide range of educational personnel and services. The counseling function on the other hand, might readily serve as an intersection through which the entire network of interactions could be organized and facilitated. It should be emphasized that this conception of the coordinating role is not merely that of a courier, shuttling messages back and forth among various participants in the process. The counselor's function would be to identify, promote, and guide the communication process--not to short-circuit it. One essential aspect of this role would be establishment of specific channels through which contact with parents could be continuously solicited and advocated. We are describing here the broad outline for a helping services specialty, whose functions, at this point in the development of mainstreaming practices, are widely and haphazardly distributed in the school's personnel structure. The concept certainly requires refinement. It appears unlikely that mainstreaming will thrive without the unifying effect of close, personal, and continuous guidance by competent, responsible hands. Assuring the significant involvement of parents in the process almost certainly requires such a development.

THE TRANSITION FROM SCHOOL TO WORK

In spite of equal opportunity legislation and other efforts to alleviate inequities in the workplace, underemployment and unemployment continue to plague the adult lives of disabled people in our country. Yet, employment success continues to be a dominant factor in determining the assessment of individual worth. So high a premium is placed on the ability to obtain and maintain employment that both reputation and self-respect depend largely on becoming a productive, independent and self-sustaining member of the community. The heavy burden of responsibility that this expectation imposes on every young adult is readily apparent in the emphasis that home, school, and community place on the clarification and pursuit of vocational objectives during the adolescent years.

The handicapped youngster is no more immune to the influence of societal stereotypes about career choice than his normal peer. In fact, increased social awareness and public emphasis on the needs and rights of exceptional children may inadvertently contribute to intensifying their dilemma. New hopes and higher expectations are widely encouraged in the activities provided by the mainstreaming and equal opportunity movements. But optimism about the future is also tempered by apprehensiveness about the real efficacy of proposals to enhance employment potential for the handicapped through education.

There is a strong tradition of acceptance for the importance of the role of education in preparing the young for adult roles in society, especially the work role. It is widely believed that education is responsible for facilitating not only knowledge and skills essential to eventual success in employment; it is also true that educational experiences are expected to contribute heavily to adaptation and socialization to the world of work. This involves among other things, career awareness, a realistic conception of personal assets and potential, a sense of responsibility, good work habits, favorable work attitudes, respect for authority, cooperativeness, congenial relations with associates. In relatively few instances does the school undertake a direct, mediating role in the transition from school to work. Quite commonly, the handicapped individual is left to his/her own devices or referred to vocational rehabilitation agencies for evaluation, training, or placement. This imposes the responsibility for negotiating the transition from training to employment on the individual or on service agencies other than the school. The result is an abrupt, premature termination of the school's role in the vocational development process. This discontinuity between schooling and labor market entry contributes to limiting opportunities for the attainment of career aspirations and fulfillment of potential. Yet it is consistent with a developmental perspective on career education that passage from school to employment be infused with experiences suited to the learning and maturation demands of the transition process itself.

There are three distinct, but related dimensions to the problem of entry-level employment for the occupationally trained individual who is handicapped. The first is his unpreparedness and inability to market even well developed job skills under competitive and unreceptive conditions. The second problem is continued employment discrimination, unjustified and inequitable labor market resistance to the absorption of the handicapped. Reasons range from skepticism about their employment qualifications to excessive concern about potential safety hazards, the reliability of disabled employees, the cost of adapting job environments to handicapped persons, and their social acceptability to business patrons and co-workers. The third obstacle is the mutual apprehensiveness of handicapped applicants and prospective employers about the ability of each to cope with the other.

Considering these obstacles, the rate of employment among graduates of the cooperative program was rather impressive and continued, gradually, to improve throughout the period covered by the study. Yet, most of these students who found work were also underemployed. With a few exceptions, they obtained available jobs for which no particular training was required and which, for the most part, hold relatively little prospect for advancement. Many more needed the transitional evaluation and training services of a sheltered workshop program before their employability could be fully established. Others seemed unable either to fend for themselves or to seek help from the available service agencies. While this may not seem unusual, and may be characteristic of early employment experience of young, high school graduates entering the labor force, it is nonetheless a matter for grave concern. It is, first of all, inconsistent with the employment aspirations and the motives that prompt and sustain the handicapped student's enrollment in a specific course of study. It also jeopardizes the handicapped individual's long range employment potential. And insofar as he/she is unable to make use of his/her educational accomplishments the competitive disadvantage of the handicapped individual in the labor market remains unimproved.

Until such time as handicapped young people can acquire the resources to accomplish the transition from school to work without continued support, this problem, with its pervasive and lifelong implications, will remain a major source of concern. If an individual's adult development potential is to be realized, it will be necessary to recognize and attend to the more subtle, but crucial difference between acquiring job skills and learning to work at a job.

There may be many ways of approaching the solution to this problem. However, no agency has the capacity for more direct, immediate, and uninterrupted influence than the school. Directed work experience programs have already demonstrated their utility in several fields of occupational training--most notably perhaps in distributive education. They help to create post-secondary employment opportunities in training-related jobs in several important ways. They enable students and employers to initiate placements on part-time, trial bases under the school's sponsorship. The student has an opportunity to relate to job responsibilities as both learner and worker. The employer voluntarily undertakes some measure of responsibility for fulfilling a formal educational role. The circumstances of the handicapped trainee's introduction to employment is less threatening to both student and employer than mutual and unqualified commitment to permanent, full-time employment. The student retains identification with the school while gradually adopting an increasingly responsible work role. Full advantage may be taken of the individual's well-developed competencies; yet other demands and expectations may be modified to afford challenging opportunities for acquisition and improvement of less developed skills. Properly managed, the work-experience environment fully utilizes the positive reinforcement value of progress and success, and reduces the frequency with which the individual's efforts are experienced or regarded as incompetent or failing. This has the powerful psychological advantage of fusing progress with accomplishment, instead of contrasting successes against failures. This can be a source of growing satisfaction not only to the employee but to the employer, and may increase the likelihood that trial placement will evolve into regular employment.

A critical factor in achieving permanence for work-experience placements is an employer's sense of investment in the trainee's developing qualifications. It is important therefore for a directed work-experience arrangement to become a cooperative venture, not only conducted by school and employer together, but jointly planned as well. In a well articulated program, for example, employer views regarding the school's occupational education curriculum receive the same serious consideration as the school seeks for its expectations about the work experience setting. This enhances both the image and the reality of the employer's educational role.

Another factor affecting the employer's sense of investment in the work-experience outcome is the nature of his arrangement with the school. Formally structured work-experience programs sometimes have convenient, continuing arrangements with employers for the placement of successive waves of work-experience candidates. While this eases the burden of a continuous search for new settings and repetition of the negotiating process, it has one very serious disadvantage. It severely diminishes the prospect that a placement will result in an eventual offer of permanent employment. Not only must the student seek employment elsewhere, upon completing a placement experience, but he does so in a job market that is constricted by the reservation of openings for future work-experience candidates. Ultimately the problem of facilitating the handicapped person's transition into employment would not be greatly improved by purely temporary work-experience placements, since such placements would not appreciably improve his own direct access to permanent training-related job opportunities; nor would they directly contribute to alleviating resistance in the labor market to hiring the handicapped applicant. If the school is to help establish transitional assistance through directed work experience, placements need to be arranged so as to encourage the possibility of continuation into regular employment.

Although the notion of directed work-experience, either in general or for the handicapped, is not a novel one, it is not commonly an integral feature of most occupational education courses. Moreover, it has not yet attracted systematic consideration as a promising means for encouraging mainstream employment of the handicapped as a natural consequence of mainstream occupational education. And as mainstreaming in the schools increases, the provision of services that support the transition from school to a variety of different roles in adult society will attract increasing attention. A carefully negotiated work-experience placement may well be the type of support service that could improve the likelihood of both adjustment to employment and lifelong career development opportunities for handicapped youngsters.

A LAST WORD

In preparing to fulfill the intent of the Education for All Handicapped Children Act, there are five major areas to be addressed: (1) the goals and objectives of the educative process as these have been identified by the institution and the personnel who serve it; (2) the identification of handicapped children, the evaluation of their individual strengths and weaknesses including all aspects of their development, and their ultimate placement in the "least restrictive environment"; (3) the translation of their present levels of physical, mental, social, personal and vocational development in IEP statements that establish sound and measurable goals for their educational growth on a short-term and annual basis; (4) the types of instructional strategies to be employed in the education of the handicapped and the nature of classroom adaptations that can be employed to facilitate their educational growth and progress; and (5) the assessment of educational outcomes in terms of employability and future career development. Each of these areas is summarized briefly in this section as an overview of their more elaborate treatment in previous sections.

Exploring Institutional Goals and Purposes

Most teachers are totally unfamiliar with the provisions of P.L. 94-142. In initiating efforts to implement it, it is necessary to provide the staff with information concerning the purpose, intent and provisions of the law. Mainstreaming, as a conceptual approach to its implementation, is an idea that has achieved considerable notoriety as educators have started to gear up for the appropriate integration of the handicapped in the regular classrooms of the nation's schools. In the popularization of the term, many erroneous connotations, misunderstandings, misinterpretations, and even misrepresentation of its nature and intent have emerged. Within the spirit and mandates of P. L. 94-142, school personnel should review the philosophical goals of their system with the intent of revising, refining or establishing institutional goals and practices in a manner that addresses the educational rights and needs of handicapped children.

There is need for dialogue among the administrative, pupil personnel and instructional staff regarding the general goals to be achieved, with special emphasis on the desired balance between those objectives that reflect an emphasis on cognitive development and those that reflect the affective domain of learning. Putting it another way, schools need to review the expected outcomes for subject matter content and those for individual development. Similarities or differences in the expected educational achievement of handicapped and nonhandicapped children should be carefully reasoned and delineated, and policy for dealing with any such discrepancies should be established.

Teachers fear the decision to mainstream children in the regular classroom will have a negative impact on their ability to serve nonhandicapped learners. Some parents have expressed similar concerns. Such concerns as these pose both philosophical and practical questions that must be resolved in determining more precisely the obligations and responsibilities of the classroom teacher. Instructional accountability in achieving the more general purposes and goals of the institution must be aligned with those that hold the teacher accountable for providing the handicapped student with the learning exposures incorporated in the IEP.

Parents of both handicapped and nonhandicapped students have the right to be involved in the determination of their child's educational placement in the school. In P. L. 94-142, these rights have been cited explicitly. More than ever before, institutional goals and policies need to be cearly expressed in terms that parents can understand and use.

Determining Appropriate Educational Placements

The evaluation of the handicapped child's individual strengths and weaknesses, the determination of his/her present levels of performance at specified educational intervals, and the identification of his/her needs and potential, taken all together, is the key to the most appropriate classroom placements. Errors in accommodating the unique needs of a handicapped child will occur but these could be reduced considerably, if we were to begin making more serious, conscientious, and systematic efforts to attend to all aspects of a child's development. Among other things, this will necessitate the development and authentication of a much broader range of assessment procedures than we routinely use at present; teachers must also learn how to identify and respond to individual needs more precisely and accurately; and they must acquire the skill to adapt their classroom strategies to meet those needs more effectively. In the years immediately ahead, special care should be exercised to avoid mis-classification and inappropriate placements. Alert classroom teachers, in active collaboration with parents, can do much to assure improvement in the process of referral, evaluation, placement, and program planning for the handicapped child. The range of appropriate educational placements will vary widely among a school's population. Full mainstreaming and various degrees of partial mainstreaming placement, as well as full or part-time placement in specialized educational environments are all viable variations.

In gathering information, as much evidence about the child's total development as possible should be obtained. Objective information about the child's cognitive abilities and academic strengths and weaknesses may be most readily available, while information about his social, self-concept, and vocational development may be more subjective and piecemeal. In general, decisions about the mainstream placement of the deaf in occupational education have had to rely on sources of information and on procedures that are not remarkable for the confidence they inspire--especially in the minds of those educators on whom the burden of decision making responsibility rests most heavily.

Limited parental participation in the gathering of information and in the actual placement decisions is common. Schools, in fact, are experiencing difficulty in obtaining parental involvement. If these difficulties are to be overcome, it will be necessary to expand and intensify initiatives aimed at developing home-school collaboration. As parents become more alert to their "rights" as enumerated in the Education for All Handicapped Children Act, earlier and more active parent involvement should result in less conflict and disagreement. In striving to deter controversy, through increased collaboration with parents, due process hearings and other more costly adversary actions can be avoided. Schools will need to experiment with new and different ways for communicating with parents and, in particular, for helping parents to recognize the importance of their role and contribution in the education of their child.

Preparing the IEP

The IEP is the heart of handicapped child's educational plan. It is also one of the more difficult provisions of P. L. 94-142 to implement. Classroom teacher reaction to the paperwork has not been enthusiastic. This seems to be the case in both the specialized schools as well as the regular schools. Some teachers have viewed the time to prepare the IEP as wasteful, indicating that it did not benefit them nor the student. Others have felt they were not sufficiently prepared to write an IEP. The statements in the IEP, when prepared in accordance with P. L. 94-142, provide for a measure of instructional accountability that some teachers fear. On the other hand, teacher proponents of the IEP have felt that it contributed to the overall development of the child's progress and that it was useful in guiding the instructional process.

The IEP has the potential for increased teacher-parent communication. At present, the variety of different methods for informing parents effectively about student progress are not being employed. Parents are advised of the student's academic progress in most cases by means of the report card, as usual, or are called in for conferences when a particular problem, usually behavioral or emotional, occurs. The opportunities for a mutual exchange of ideas and information must be cultivated. Historically, schools have tended to minimize parental involvement and, in many instances, dismiss their attempts to become involved as a form of interference. Under P. L. 94-142, parents who feel their child has been improperly placed has access to clearly defined due process, Teachers are having a great deal of difficulty in preparing statements for the IEP. Particular attention needs to be directed to the five elements of the IEP as directed by P. L. 94-142. Teachers need help in learning how to prepare statements that definitively express the short-term objectives and in establishing criteria for the evaluation of these objectives. The IEP, as it is being currently prepared, is inadequate for assessing the educational progress and achievements of students or as a means of insuring instructional accountability. Schools are developing IEPs each year based on grade level or subject matter goals. However, their end-of-year evaluations are not as explicit. At best, they seem to rely most heavily on final tests and/or the final mark in the course. The result is much planning and generalized goal-setting at the beginning of each year but very little reporting of the progress on either a periodic or annual basis. Very few IEPs are being re-examined or revised to accommodate newly identified student needs or other changes in students' developmental patterns.

One of the more obvious limitations of IEP preparation and implementation rests with their restricted focus. Although academic needs and accomplishments are a primary concern of the school, other facets of the handicapped child's development must be considered. Educators need a great deal of assistance in learning how to identify and provide for social, vocational and self-concept development.

Instructional Strategies

Many teachers in the cooperative program for mainstreaming deaf students in occupational education have been challenged by the opportunity to work with the handicapped and satisfied with the results they have achieved. It has not been an easy assignment. Teachers who participated in the program have been actively involved in modifying their instructional strategies and techniques to accommodate deaf learners. Their experience would indicate that competent teachers who are willing to accept the responsibility of attuning their classroom methodology to the handicapped learner can and will succeed. These classroom teachers did not seem to feel that the regular students in their classes were disadvantaged by the adaptations they made in the teaching-learning process. In fact, many of them felt it improved their teaching capability. The nonhandicapped students in the class agreed. They indicated that they often get more out of the lecture presentations or class demonstrations when the teacher talked more slowly or used an overhead projector. In many ways, it seemed that instructional techniques which were helpful to the handicapped were helpful to everyone in the class.

Teachers do not have to rely solely on their own devices and time to provide for the needs of the handicapped. The use of peer teaching and peer pairing techniques are indicative of how classroom teachers can effectively engage nonhandicapped students in a helping role. Although some teachers may feel they are unable to give the handicapped student as much individual attention as he/she may need, both the handicapped students and the teacher seem to adjust to the continuing demands on the teacher. The handicapped student becomes more independent and self-reliant, while the teacher gradually accepts the limitations of time. As teachers experience and observe the effects of the normalization process in the classroom, their initial feelings of inadequacy are diminished. It is perhaps this change in the total order of the classroom and in the nature of the classroom interactions that is the single, most important outcome for everyone in the mainstreamed setting.

Instructional evaluation poses a variety of problems. There is the ever-present feeling that the handicapped student must be accommodated to assure success. At times, therefore, the teacher may be inclined to dilute learning expectations or standards. This can be more detrimental than helpful, if standards essential to certification of minimum acceptable qualifications are abandoned. For this reason it is important in setting performance standards in any educational enterprise to distinguish between essential objectives and arbitrary objectives that are, in fact, non-essential to attainment of competency. The student's placement in the mainstream classroom should be considered an indication of his/her readiness to compete with the essential work task requirements of the course. It is possible to place a student in a course for which he/she is unable to satisfy minimal acceptable standards for purposes other than fulfillment of a course's work-task objectives, e.g., the socialization and personal development benefits. Assuming that there are also some certain subject matter benefits to the student, this might, in an individual case, represent optimal placement. In such instances, it would be reasonable to waive requirements which a student cannot fulfill--but, by the same token, it would become unreasonable to evaluate the individual's progress against the ordinary course requirements at all. In other words, if objectives for an individual student enrolled in a particular course do not coincide with the objectives of the course itself, then no pretense should be made to represent the situation as comparable to regular enrollment. The short-term objectives in the IEP should serve to identify and guide the needed learning exposures. Therefore, teachers should have a fairly specific grasp of the desired achievements. Handicapped students, like their nonhandicapped peers, should be expected to meet these requirements. If they must experience occasional failure in the process of achieving their goals, it is more important for them to recognize that failure is an aspect of all successful learning processes, than to feign success. There is no need to shelter them from exposure to failure, so long as they can use failure as an informative basis for motivating continued pursuit of success. Of primary importance is planning learning experiences so that exposure to any task takes into account the student's readiness for the task and his/her capacity to accomplish it. There is much for the handicapped student to learn in the pursuit and attainment of eventual success in school and employment. Having to lower classroom standards of performance for the handicapped renders the IEP useless as a guide to future planning and development activities.

On Becoming Employable

From follow-up data obtained on the graduates of the occupational education programs, it is apparent that many of them were unable to achieve "trade standards" of performance. While a few of the graduates were subsequently able to secure jobs that utilized their occupational training, many were not employed in jobs commensurate with or related to their training. Furthermore, it is doubtful if they could have succeeded in such jobs without additional training. Intermittent unemployment and underemployment were frequent. A large number of these graduates obtained placements in sheltered workshop programs where they were able to improve their job seeking or work performance skills and obtain help in locating a job. The eventual placement of these graduates was often due to the service of a vocational rehabilitation counselor who persuaded a potential employer to hire a handicapped person or who was familiar with the local labor market and with employers sympathetic to the employment of disabled people.

Handicapped students should be expected to achieve the same standards of work performance quality required from their nonhandicapped peers. It has been noted that some occupational education teachers indicated that deaf students often needed more time to accomplish a work task or to learn a skill. Handicapped students may need additional time to read a report, complete a project or acquire a skill. The teaching-learning process can be adapted or modified to accommodate the handicapped student's rate of accomplishment. This suggests that many handicapped students need an extended period of schooling. For others, it may mean a reduced course load. It does not, however, imply that the program of instruction should be compromised in ways that may adversely affect an individual's ability to become employed in the job field for which he/she is being trained.

Another group of students remained unemployed for relatively long periods of time. These were students with problems, some serious, that had been either overlooked or permitted; for various reasons, to manifest themselves without direct remedial intervention. By and large they had been considered poor students, or students who did not work up to capacity. These students often expressed dissatisfaction or unhappiness with their program in the occupational education center. There was some evidence, also, that these students were those who experienced most discomfort in associating with hearing students. After leaving school, they seemed to retreat to their homes and family and tended to limit their associations outside the home to a limited group of friends or deaf acquaintances. Characteristically, they demonstrated no initiative in pursuit of employment, though generally they expressed an interest in becoming employed if the opportunity were offered to them.

Handicapped students tend to rely on others in finding a job. Job seeking skills should be an integral part of their instructional or career education program. Learning how to use community resources (e.g., newspapers, agencies) complete job application forms, contact potential employers and follow-up job leads from counselors, relatives and friends are necessary job seeking skills that should be developed. Knowing how to present one's self in the job interview, how to respond to interview questions directed at one's disability, or how to detect discriminatory behavior are job interview behaviors which should be introduced and practiced repeatedly. Every IEP should reflect the student's level of job seeking skills and should be regularly reviewed and revised to assure continual growth.

Whenever disabled students are mainstreamed in the regular classroom there is always the potential for adapting the work task requirements to accommodate the handicapped learner. Modifying equipment, work task procedures or the working conditions to accommodate the students, as learner, and the adult, as worker, must become a more integral part of school life and worklife. As both the handicapped and nonhandicapped learner and their teachers are required to innovate and change ways of working in the classroom, they are learning how to "tailor" work routines, restructure job tasks, or modify equipment--all aspects of what has come to be known as job accommodation. We are becoming more cognizant daily of the many tasks that can be accomplished by handicapped individuals by merely adding a lever, raising or lowering a work bench, providing a sound (or visual) signal, or extending a handle. As more people become aware of, promote, and actually attempt job accommodation, it will become a "normal" aspect of our daily living and working. It is especially important that handicapped people learn how to think "adaptation" with specific reference to work task accomplishment. In this way they are learning more about what they "can do" and they are learning how to present themselves and the idea of job accommodation to their present and future employers.

Mainstreaming: A Credible Concept

Perhaps the most striking message of the evidence accumulated over the entire course of the study is the practical credibility of mainstreaming objectives: (1) A severely handicapping condition is not necessarily accompanied by insuperable obstacles to accomplishment or to adjustment in the company of nonhandicapped pupils; (2) Special services, along with other resources normally available in the ordinary school setting, can be productively mobilized to promote, support, and sustain fruitful participation in the regular school environment; (3) Willing teachers can successfully adapt their instructional relationships with an entire class to a wide range of individual differences in ways that generally enhance individual progress; (4) Individual differences in performance rates can be prevented from interfering with individual progress, and even turned to the mutual advantage of both handicapped and nonhandicapped (e.g., through stratagems like peer-teaching and peer-pairing) by combining valuable reinforcement of accomplishment for one student with another student's opportunity to learn; (5) The potential for normalizing the educational experiences of handicapped youngsters can be promoted through a wide variety of curricular and co-curricular activities (e.g., clubs and organizations); and (6) The employment potential of handicapped students can be greatly enhanced by realistic exposure to the demands and requirements of successful adjustment to the world of work.

Mainstreaming is not a panacea in the education of the handicapped. In its many forms, it is a way of providing more adquately for the integration of the handicapped in the mainstream of American life. Through this study, it has been possible to identify many of the problems which appear to obstruct both successful adaptation of the school environment to handicapped students and effective adjustment of these youngsters to the regular school setting.

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